SiteScan® SS2000W

for Windows

Centralized Monitoring System

USER'S MANUAL

Liebert®

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1 What's New

SiteScan 2000 for Windows (version 2.6A)

New Features

1. SiteScan 2000 for Windows version 2.6A is now Year 2000 Compliant.

2. With V2.6 and higher, SiteScan 2000 for Windows includes **Alert EL** as the standard alarm management software. Most of the functions formerly performed by Logger are now handled by Alert EL and Alert Server. Refer to the *Alert EL User's Guide* for more information. For more comprehensive alarm management, we recommend that you purchase and install the full-featured Alert software.

3. Support for **Windows 98** has been added.

* * *

2 Introduction

Overview

SiteScan 2000 for Windows is a full-featured software package designed to monitor critical support equipment. The software includes programs which run on a **Workstation** computer and other programs called **Function Blocks** (FBs) which reside in individual **control modules**. The control modules are installed at or near the local point of interface. These modules are networked together and usually communicate with the Workstation through a single **gateway module** (normally a SiteGate-232, SiteGate-ETH, or a DCLAN) over telephone lines. This combination of software and hardware allows the implementation of a system-wide monitoring system.

Interfacing with SiteScan 2000 for Windows

The human operator communicates with each control module network, called a **CMnet**, through a Workstation. The Workstation software receives information from the modules and processes it so that it can be viewed from the perspective of all locations being monitored: a group of buildings in a complex, an individual building, a floor within that building, an individual zone, or an individual piece of critical support equipment.

When the equipment level is reached, the operator is communicating directly with the Function Block in the module which is monitoring the displayed equipment. This is the most local point of interface, and the operator can quickly assess the performance of that particular equipment and take whatever action is required.

Workstation Software

Different versions of workstation software are available:

- SiteScan 2000 for Windows Single User -- Supports all standard features, including multiple CMnets, and a high resolution, dynamic color graphics package with pop-up menus and windowing capabilities. Alert, Live GFBs, and Trend Historian are also supported.
- SiteScan 2000 for Windows Multiuser -- Supports all standard features including the capability for multiple users to access the System files simultaneously.
- SS2W -- Supports most standard features. Does not support Live GFBs, Trend Historian, network shared files, or area level graphics.

Minimum Requirements

Because SiteScan 2000 for Windows is designed to run under the Windows environment, certain hardware and software requirements must be met, as described below.

Minimum Software Requirements

- MS-DOS 5.0 or higher.
- Microsoft Windows 3.1 or later (see the section **Windows Considerations** on page 2-4 for more information).
- SiteScan 2000 for Windows Install.

Recommended Network Protocols

- NetBEUI
- TCP/IP

Minimum Hardware Requirements

- 80386 or 80486 IBM PC-AT compatible. (80486, 66 MHz, VESA local bus recommended)
- 8 megabytes RAM.
- 540 Mb hard drive.
- Microsoft mouse.
- 101-key keyboard.
- VGA card which supports a resolution of 640x480 pixels with 256 simultaneous colors under Windows (VESA local bus recommended). If you are using Windows 3.1, you must also have a Windows 3.1 driver.
- VGA monitor capable of displaying resolution of 640x480 pixels with 256 simultaneous colors (0.28 max. dot pitch).
- One parallel port, one serial port.

Recommended Network Media

- Ethernet
- Token Ring

Recommended Network Cards

- Intel EtherExpress (Ethernet)
- Intel TokenExpress (Token Ring)

Windows Considerations

SiteScan 2000 for Windows requires one of the following operating systems:

- Microsoft Windows 3.1 and 3.11(must be running in 386 Enhanced mode. Only 386 and later computers support Enhanced mode operation.)
- Microsoft Windows for Workgroups 3.11
- Microsoft Windows 95
- Microsoft Windows 98 (requires SiteScan 2000 for Windows V2.6 or later and Alert V1.2 or later)

Windows 3.1

In order to install SiteScan 2000 for Windows, you must have previously installed Windows with the appropriate graphics driver for 640 x 480 x 256 colors using the Windows 3.1 drivers and instructions that came with your graphics card. Once the Windows installation has been completed, verify that Windows is running in 256 color mode by going to the **Windows Setup** in the **Main** program group and looking at the display settings. Next, verify that Windows is running in 386 Enhanced mode by selecting **Help** and **About Program Manager** from the Program Manager menu bar. If Windows reports that it is running in Real mode, check to make sure that the appropriate version of **himem.sys** has been loaded in **config.sys**. Unless you are using MS-DOS 5.0 or later, use only the version of **himem.sys** that came with Windows and not the version that came with DOS.

In order to run properly in Microsoft Windows 3.1, SiteScan 2000 for Windows requires that the DOS program **share.exe** be loaded in memory during execution of the **autoexec.bat** file. The setup program modifies the **autoexec.bat** file if necessary.

Windows 95

SiteScan 2000 for Windows can run under Windows 95, which provides many benefits over Windows 3.1.

If you experience palette problems with your current video drivers, you

may find that Windows 95 resolves your problem. One of the problems is that when switching between Windows software using the **Alt-Tab** feature, the colors sometimes do not return to normal. Windows 95 addresses this situation by providing better support for a wide range of video hardware and by providing more stable and reliable video driver software.

In addition, the Windows 95 Setup automatically detects the display adapter in the computer and it installs the correct display driver for the computer, upgrading to a new driver if a newer version is available. Microsoft developed many of the display drivers for Windows 95 in conjunction with the display hardware manufacturers. The Microsoft development team also worked closely with hardware manufacturers to write additional software display drivers and assisted in optimizing drivers to enhance display speed for improved graphic performance.

Another benefit is that Windows 95 supports reliable communications up to 115k baud.

We do not recommend upgrading to Windows 95 unless the computer has *at least* a 486/33 MHz processor and has 8Mb of RAM.

For more information about upgrading to Windows 95, refer to the September 12, 1995, Vol. 14, No. 15 issue of *PC Magazine*.

The Task Bar

When the user is displaying a screen which is several levels deep, the Windows 95 Task Bar can cover parts of the screen. To prevent this from happening, we recommend setting the Task Bar properties so that Auto-Hide is enabled and Always on Top is disabled.

NOTE Do not modify the Windows 95 Task Bar properties while SiteScan 2000 for Windows is running.

Install Procedure

The setup program allows you to install files on a local computer or on a network server. Each computer which will run the software requires a separate license. See the section **Software License** on page 2-11 for more information about registering or transferring a software license.

Approximately 18 Mb of disk space is required to store the installed software. If previous versions of the software exist, much of the required disk space will be made up by overwriting existing files.

If you want to abort the installation process before it is complete, you can pick the **Exit** button in the lower right at any time. However, if the install is not finished, using this button prevents the setup program from deleting any temporary files that it may have created on your computer. You must complete the installation process before you can run the software. If the installation is for an upgrade from a version prior to SiteScan 2000 for Windows V2.5, the hardware key must be installed on the parallel port or the installation cannot be completed.

NOTE The setup program will overwrite any existing files having the same filename and a file date **older** than what is included on the install disks.

NOTE If this is not a new installation, be sure to retain the install disks from the previous version.

Client-Server Installations

In a client-server installation, the software files are stored on a network file server where other workstations (clients) can access them. Only SiteScan 2000 for Windows Multiuser can be installed as a client. We recommend using only a dedicated file server in client-server installations. This means that the computer where the files are stored cannot be used as a workstation.

To install the files on the server, you may run the setup program at the server or at a client. We recommend running the install at a client because the setup program can setup both the server and the client from there. Next, install the software on each client computer. Each computer which will run the software requires a separate license. See the section **Software License** on page 2-11 for more information.

To Install SiteScan 2000 for Windows

NOTE This software requires that you install and configure Alert or Alert EL V1.2 (or higher) in order to receive alarms and trends.

1. Run Windows.
2. Make a copy of each installation disk.
3. If this is not a new installation, back up the Logger Reports for each system using the Backup and Restore utility or by copying them to a separate directory or disk. To view **.rep** files after the install, use a text editor or word processing program.
4. If this is not a new installation, back up the System Files for each system using the Backup and Restore utility.
5. Ensure that the date and time are accurate using the Date/ Time application in the Windows Control Panel. Changing the date after the installation is complete may invalidate the license.
6. Close all Liebert applications. Ensure that no one attempts to compile configuration text during the installation.
7. Insert the first install disk into a floppy drive of your computer.
8. For computers running Windows 95, pick the **Start** button then pick **Run**. For computers running Windows 3.1, pick **Run** from the Program Manager's **File** menu. A pop-up dialog box will appear.
9. At the Command Line, enter **a:\setup.exe** (designate the correct drive for your computer). Click **OK**, or press **Enter**.
10. At this point, the setup program begins. At the Welcome dialog box, select one of the following:
    - **Install** to install the software program files with a new (unregistered) license. This option should only be used for a new installation or for an upgrade from a version prior to V2.5. See the section **Software License** on page 2-11 about registering your license.
    - **Install w/o License** to install the software program files without installing a new software license. This option should be used when a license is already installed on the computer (i.e., when upgrading from SiteScan 2000 for Windows V2.5 or higher) or when transferring a license from another computer. See the section **Software License** on page 2-11 for more information about transferring a license.

- **View Product Options** to view information about the product being installed.
- **Quit** to exit the installation.

If a valid SiteScan 2000 for Windows software license is detected on the computer and the **Install** option is chosen, a verification message will appear. The **Install** option will overwrite a valid license that already exists on the computer with a new license that must be re-registered. *If the computer already has a valid SiteScan 2000 for Windows license, use the* ***Install w/o License*** *option.*

11. If the product being installed is a Multiuser product, the setup program displays a Client Install dialog box. Pick **No** to install all the files required to run the software locally. Pick **Yes** to install only some of the files locally -- the rest of the files will be installed or are already installed on a network server.
12. At the Specify Location dialog box, enter the directory where the software is to be installed. Press **OK** to continue.

    The setup program begins installing files and prompts you when another disk is necessary. The number of disks used may vary depending on factors such as the install options selected or on the type of product being installed -- do not be alarmed if all the disks are not used.

NOTE The setup program will overwrite any existing files having the same filename and a file date **older** than what is included on the install disks.

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13. After the files are installed, specify which program group will contain the icons for this software. An option is included to delete the icons for previous versions of this software. Press **OK** to continue.
14. Enter the name of your primary System ID. This is the three-character System name that the software looks for when it is first launched. Press **OK** to continue.
15. Choose whether you want the setup program to make changes to the listed files. If you pick **Update**, the original files are renamed and then recreated with changes in place. This method allows you to restore the previous versions of these files if necessary. If you press **Skip** the files are not changed.
16. When the installation is complete, the final dialog box appears. Make a note of the instructions displayed. Press **Installation Complete** to continue.

17. Quit Windows and restart your computer.
18. Launch Windows. Insert the diskette labeled 2.6a Y2K Upgrade into your computer's floppy drive.
19. In Windows Explorer or File Manager, double-click the **ssw26a.exe** file on the diskette to start the upgrade. Install the upgrade files into the same directory you chose in step 12.
20. If there are no system files installed on the computer, as is the case for a new installation, use the following procedure to restore your system files.
    a. Launch the **Backup and Restore** utility and pick the **Restore** tab.
    b. Select the **System ID** which corresponds to your system files. If the correct System ID is not listed, you must add it using the INI Configuration Manager utility.
    c. In the File Selection section, pick the **Restore System Files** option.
    d. Enter the **source location**, and if necessary, place the floppy disk containing the backed-up system files into drive A:\.
    e. Select **Start Restore**.
21. Use the **Configuration Utilities** program to compile configuration text for ***every*** System that will be accessed by this workstation.
22. Run SiteScan 2000 for Windows using the initial Owner level password of **ss2000**, then go to the Passwords page and change it to something else to prevent unauthorized users from accessing the program. Be sure to record all password settings.
23. Set up the Connection Configuration page with the hardware connections which are used on your computer. Any changes made on the Connection Configuration page affect all Liebert Windows products. See the section **Connections Page** on page 3-9 for more information.
24. In order to receive alarms or trends, you must install and configure Alert or Alert EL. Refer to the *Alert EL User's Guide* or the *Alert User's Guide* for more information about installing and running Alert.

Running SiteScan 2000 for Windows

When SiteScan 2000 for Windows is first installed, the initial Owner level password is **ss2000**. Changing this password should be the first action when SiteScan 2000 for Windows is run the first time.

In order to run properly, SiteScan 2000 for Windows requires that the DOS program **share.exe** be loaded in memory during execution of the **autoexec.bat** file. The setup program modifies the **autoexec.bat** file if necessary.

NOTE If you minimize SiteScan 2000 for Windows while connected to a System, the Workstation remains connected to the System.

To Start SiteScan 2000 for Windows

1. Use the **Configuration Utilities** program to set the current System ID.

2. Double-click on the SiteScan 2000 for Windows icon.

Software License

When SiteScan 2000 for Windows is installed, a software license and a license administration program are installed onto your computer. In rare cases, it may become necessary to transfer your license to a different computer. The SiteScan 2000 for Windows License Administration program allows you to register the software license and to transfer the license to a different computer.

Registering the Software License

Shortly after installation, SiteScan 2000 for Windows will ask you to register your copy of the program. Registering your software allows us to learn more about our customers and to keep you informed of future enhancements and changes to SiteScan 2000 for Windows. It requires only a telephone call to the Registration Desk to verify your software's serial number and site code. The caller will be given an Authorization Code that permanently validates the license.

You may also use the License Administration Utility to register the license. This utility provides the same information as the registration pop-up, and can be used to register the software license and to transfer the license (see the section **Transferring the Software License** on page 2-12).

NOTE Do not use the License Administration Utility to register your license while SiteScan 2000 for Windows is running. Doing so may corrupt the software license. Exit SiteScan 2000 for Windows and then launch the License Administration utility.

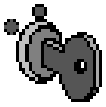
In very rare cases, your software license may become invalidated. Following are some of the circumstances that will cause the software license to become invalid:

- Hard disk failure or replacement.
- Formatting the hard disk and attempting to restore SiteScan 2000 for Windows files.
- Use of a disk compression utility (such as Stacker or DoubleSpace). See the following NOTE.
- Discontinued use of a disk decompression utility. See the following NOTE.

NOTE If SiteScan 2000 for Windows is installed while a disk compression utility is in use, the software license will not be affected as long as the use of the utility continues. Only if the disk is decompressed at a later date will the license become invalid. Likewise, if SiteScan 2000 for Windows is installed on an uncompressed disk, the license will not be affected unless a compression utility is implemented at a later date. Use of standard defragmentation utilities may invalidate the license. Please transfer the license to disk before using a defragmentation utility.

In the event that your license becomes invalid you must reinstall the software from the original distribution diskettes. After the software has been re-installed, the registration pop-up will appear. You will then need to call the Registration Desk to obtain a new Authorization Code.

Transferring the Software License



The SiteScan 2000 for Windows License Administration program allows you to transfer your software license to another computer. The transfer process will remove the license from the existing computer and install it on the new computer. Note that after the license is transferred to a different computer, the original computer will no longer be able to run SiteScan 2000 for Windows. Double-click the SiteScan 2000 for Windows License Administration icon to display the License Administration pop-up.

Figure 2-1: SiteScan 2000 for Windows License Administration pop-up

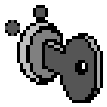
The following restrictions apply to transferring the SiteScan 2000 for Windows software license:

- A license cannot be transferred before the software has been registered and an Authorization Code has been obtained. To use SiteScan 2000 for Windows on a different computer before the software has been registered, use the original distribution diskettes to re-install SiteScan 2000 for Windows on the other computer.
- A license can only be transferred to a computer that does not have a valid license. If a license must be transferred to a computer that already has a valid license (for example, if the SiteScan 2000 for Windows software was already installed on the new computer before beginning the transfer process), use the **Destroy License** option on the SiteScan 2000 for Windows License Administration pop-up. ***CAUTION: This option will remove the software license from the computer, and SiteScan 2000 for Windows cannot be run until a license is transferred or SiteScan 2000 for Windows is re-installed from the original distribution diskettes.***

In order to transfer the SiteScan 2000 for Windows software license, you will first need to prepare the new computer to receive the license. The transfer process requires the temporary use of a diskette or network drive. This process does not require contacting the Registration Desk.

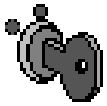
To Prepare the New Computer to Receive the License

1. ***On the computer that is to receive the license***, install the SiteScan 2000 for Windows software from the original distribution diskettes, using the **Install w/o License** option. See the section **Install Procedure** on page 2-6 for more information.



2. Run the SiteScan 2000 for Windows License Administration utility by double-clicking the SiteScan 2000 for Windows License Administration icon. The SiteScan 2000 for Windows License Administration pop-up will appear.
3. Click the **Prepare License Transfer Disk** button. A message will appear asking you to enter the drive and directory that will be used to make the license transfer. This can be a diskette or network drive. If a diskette is being used, be sure to insert the diskette in the appropriate drive.
4. Enter the appropriate drive and directory and click **OK**. The License Administration program will prepare the diskette or network drive to receive a license from another computer.
5. To complete the transfer, follow the steps in the section **To Transfer the License to the New Computer**.

To Transfer the License to the New Computer



1. ***On the computer that currently has the license***, run the SiteScan 2000 for Windows License Administration utility by double-clicking the SiteScan 2000 for Windows License Administration icon. The License Administration pop-up appears.

2. Click the **Transfer License to Disk** button. A message will appear asking you to enter the drive and directory that will be used to make the transfer. This entry must correspond to the location of the diskette or network drive that was prepared in the section **To Prepare the New Computer to Receive the License**.

3. Enter the appropriate drive and directory and click OK. The license will be transferred from the computer to the diskette or drive temporarily. ***At this point, the license no longer exists on the computer, and SiteScan 2000 for Windows can no longer be run on this computer.*** A message appears indicating that the transfer was successful.

4. If you are using a diskette to make the transfer, take the diskette to the computer that will receive the license and insert it into the diskette drive. From the SiteScan 2000 for Windows License Administration pop-up, click the **Receive License from Disk** button. A message will appear asking you to enter the drive or directory where the transferred license can be found.

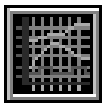
5. Enter the appropriate drive and directory and click OK. A message appears indicating that the software license was successfully received. ***The license is now permanently transferred to the new computer.*** The diskette or network drive used to make the transfer no longer contains any license information.

Program Identification

Overview

During the installation, icons were installed in a new or an existing Windows group for the following programs.

SSW -- This program is SiteScan 2000 for Windows, an interactive, graphical interface for monitoring critical support equipment.

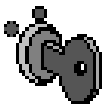


Trend Historian -- This program is a feature of SiteScan 2000 for Windows which stores trend information gathered by Alert Server in a database so that it can be seamlessly retrieved and displayed on the Trend Graph. See the section **Trend Historian** for more information.

Draw for Windows -- This program is used to produce the color graphics which are displayed within SiteScan 2000 for Windows. It saves files using the **.gfx** file format. These graphics files can only be displayed in SiteScan 2000 for Windows V2.0 or later using a VGA-compatible monitor and graphics card. See the section **Draw for Windows** for more information.

Configuration Utilities -- This program allows an operator to change the SiteScan 2000 for Windows default System ID, update or compile configuration text, merge systems, or build a custom M68 directory. See the section **Utility Applications** on page 7-1 for more information.

INI Configuration Manager -- This program simplifies the process of making configuration changes to Liebert applications. It is a user-friendly interface to the most commonly changed settings in the **alc.ini** file. See the section **INI Configuration Manager** on page 5-23 for more information.



License Administration -- This program allows you to transfer your software license to another computer. See the section **Software License** on page 2-11 for more information.

FB Fit -- This program determines whether the specified Function Blocks from the master or custom M68 directory will fit into the specified module. It handles both Exec 3 and Exec 4 modules, although some microblocks cannot be downloaded into modules having early Exec versions. See the section **FB Fit** on page 7-6 for more information.

Backup & Restore -- This program uses standard ZIP compression to back up or restore for the current System either the System files, Alert database files, or Trend Historian database files. See the section **Backup & Restore** on page 7-7 for more information.

The Use of Color

Overview

Color is used by SiteScan 2000 for Windows as a powerful information tool. Each color has been assigned a code that communicates the status of a given space or piece of monitored equipment. By viewing the colors displayed on the Workstation terminal, the operator receives the system's analysis of the current condition of the space or equipment compared to the operator's established criteria of performance. This allows the operator to be quickly updated on actual versus planned performance of each area of his facility without having to scroll through lines and lines of numerical data or computer code.

What the Colors Mean

SiteScan 2000 for Windows determines which color should appear by comparing the actual condition of a piece of equipment to the target criteria set by the operator. Each color has a Status Code associated with it which is displayed on each Function Block status page. Colors are used to communicate the following conditions.

Table 2-1: Status Colors

Status Code	Color	Condition
0	Purple	Hardware communication error
1	Gray	Unoccupied/Inactive
2	Red	Alarm
9	Red	Alarm
10	White	Occupied/Active
13	Coral	FB error
14	Charcoal	Module stopped (due to incomplete schedule or parameter download)
15	Purple	Software communication error
None	Mustard	Configuration error

Navigating the System

Using the Mouse

SiteScan 2000 for Windows simplifies communication with its sophisticated information system by allowing all operator activity to be executed through the use of a two-button mouse and a series of pull-down menus or on-screen buttons. The mouse allows you to quickly move the on-screen cursor, shaped like an arrow, to select the location or piece of information about which you want to inquire.

This selection process is executed by placing the arrow on the name of the item to be selected. The item's background changes to reverse video, or "highlights," when the cursor passes over it. The mouse picks upon release of the left button. Once you have made your selection, the screen will display the next level of information.

Moving Around

SiteScan 2000 for Windows allows you to access a tremendous amount of information in a logical and efficient manner. Each system is organized into Areas which may contain other Areas or Function Blocks. The hierarchy of the system is stored in the configuration text. When an area is displayed, such as a building or floorplan, you are considered to be at the Area level. When a Parameter page, Status page, FB graphic, Live GFB, Setpoint Graph, or Point Help page is displayed, you are considered to be at the Function Block level, the most basic level of control in SiteScan 2000 for Windows.

Once you've correctly entered your password, the first graphic to appear on the screen is either a map of all locations under control through your Workstation, or a building elevation or logo for a single site installation. This graphic is the System level graphic, the highest level in the hierarchy.

If a map is used, each location is identified in a text block on the map. (On some multiple-building Systems there may be a list of the buildings in alphabetical order to use for access.) To access any of these locations, pick the text block using the left mouse button.

Figure 2-2: Sample System-level graphic frame

When a building is picked, the screen changes to reveal a graphic of the building and/or its floor plan. Each floor of the building may have a separate graphic.

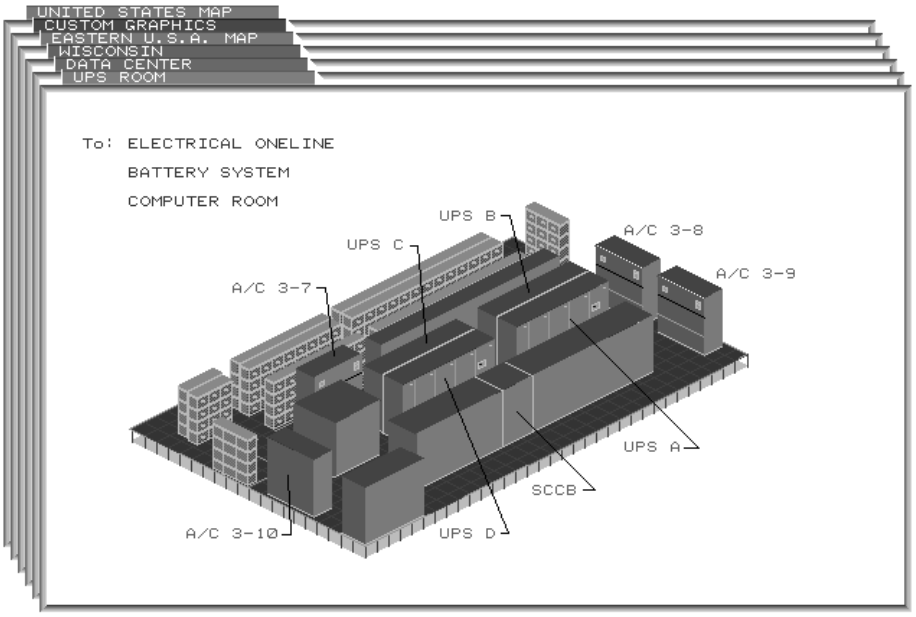


Figure 2-3: Sample Area-level graphic frame

To look further into the building, you can select a particular floorplan by using the mouse to place the cursor on the name of the floorplan and pushing the left button. The Equipment level represents the lowest level of the heirarchy. This graphic represents the particular piece of Liebert equipment that is being monitored. The displayed information gives the exact status of the equipment at that time.

Figure 2-4: Sample FB-level graphic frame

Equipment status and variable colors may be updated automatically by the **Refresh Colors** feature, which is configured on the Setup Page. Note that this feature applies only to graphic screens, not to status screens.

Dynamic updating is suspended if the frame is not visible. For example, if another Windows application partially covers the frame, dynamic updating still occurs. But if the frame is completely covered, or if SiteScan 2000 for Windows is minimized, dynamic updating is suspended.

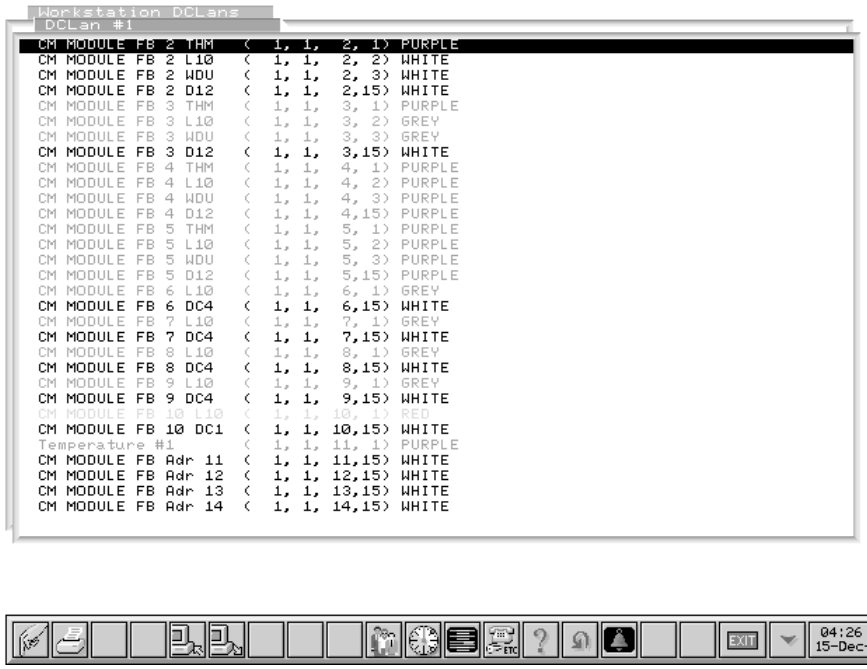

Workstation DCLans
DCLan #1
CM MODULE FB 2 THM (1, 1, 2, 1) PURPLE
CM MODULE FB 2 L10 (1, 1, 2, 2) WHITE
CM MODULE FB 2 WDU (1, 1, 2, 3) WHITE
CM MODULE FB 2 D12 (1, 1, 2,15) WHITE
CM MODULE FB 3 THM (1, 1, 3, 1) PURPLE
CM MODULE FB 3 L10 (1, 1, 3, 2) GREY
CM MODULE FB 3 WDU (1, 1, 3, 3) GREY
CM MODULE FB 3 D12 (1, 1, 3,15) WHITE
CM MODULE FB 4 THM (1, 1, 4, 1) PURPLE
CM MODULE FB 4 L10 (1, 1, 4, 2) PURPLE
CM MODULE FB 4 WDU (1, 1, 4, 3) PURPLE
CM MODULE FB 4 D12 (1, 1, 4,15) PURPLE
CM MODULE FB 5 THM (1, 1, 5, 1) PURPLE
CM MODULE FB 5 L10 (1, 1, 5, 2) PURPLE
CM MODULE FB 5 WDU (1, 1, 5, 3) PURPLE
CM MODULE FB 5 D12 (1, 1, 5,15) PURPLE
CM MODULE FB 6 L10 (1, 1, 6, 1) GREY
CM MODULE FB 6 DC4 (1, 1, 6,15) WHITE
CM MODULE FB 7 L10 (1, 1, 7, 1) GREY
CM MODULE FB 7 DC4 (1, 1, 7,15) WHITE
CM MODULE FB 8 L10 (1, 1, 8, 1) GREY
CM MODULE FB 8 DC4 (1, 1, 8,15) WHITE
CM MODULE FB 9 L10 (1, 1, 9, 1) GREY
CM MODULE FB 9 DC4 (1, 1, 9,15) WHITE
CM MODULE FB 10 L10 (1, 1, 10, 1) RED
CM MODULE FB 10 DC1 (1, 1, 10,15) WHITE
Temperature #1 (1, 1, 11, 1) PURPLE
CM MODULE FB Adr 11 (1, 1, 11,15) WHITE
CM MODULE FB Adr 12 (1, 1, 12,15) WHITE
CM MODULE FB Adr 13 (1, 1, 13,15) WHITE
CM MODULE FB Adr 14 (1, 1, 14,15) WHITE
EXIT
04:26 pm
15-Dec-94

Figure 2-5: Sample text-only screen

When a graphic file is not available for a frame which has areas or Function Blocks defined beneath it, SiteScan 2000 for Windows will display a list. This list contains a line of text for each area or FB. The list contains a line of text for each area or FB. The text includes the tab label, address, and color (if it's an FB) or the word "Area" (if it's an area). The text itself is displayed in the same color as the FB or in white if it's an area.

Multi-User Support

SiteScan 2000 for Windows Multiuser allows multiple users on a local/wide area network to share a single set of System files, so that changes

made by one user are seen by all other users which share the same files. It does this by preventing multiple operators from changing the same Function Block or other part of the program at the same time. When this occurs you are notified by a pop-up which indicates that it is being used by someone else. This could happen when you attempt one of the following actions:

- Display an FB Parameter page, Live GFB, or Point Help page.
- Perform a Global Modify.
- Modify schedules (optional feature).
- Modify a setpoint on the Setpoint Graph.
- Change the members of a Group (optional feature).
- Update configuration text.
- Display the Connections page, Passwords page, or Setup page.

Tabs

SiteScan 2000 for Windows features a series of tabs which appear in the upper left corner of the screen to help you always remain aware of where you are in the system. These tabs mark your progress and give you a constant overview of your position within the system. Up to eight tabs may be displayed.

Choosing a tab is an easy way to move around within SiteScan 2000 for Windows. When you pick a tab, SiteScan 2000 for Windows goes to that frame and displays the corresponding graphic file (see the section **Graphic Frame Display Order** on page 2-23). This feature comes in handy especially after you have made changes on a screen at the Function Block level. Because these changes are automatically downloaded to the module when you leave the screen, it is convenient to simply pick the lowest tab.

In addition to using tabs, several **Manual System Commands** can be issued from within SiteScan 2000 for Windows. These commands can be used from any level in the system to help make system operation more efficient.

For example, the **Return** command can be issued multiple times to display up to eight of the previously viewed nodes in reverse order. Other commands can take you directly to certain screens without having to use the tabs. See the section **Commands** on page 3-1 for details on Manual System Commands.

Graphic Frame Display Order

When SiteScan 2000 for Windows opens a graphic frame, it searches in the following order for the file to display.

- Bitmap file -- **.bmp** This file is always displayed if found (see the section **Using Bitmaps** on page 5-43).
- Draw for Windows file -- **.gfx** (see the section **Save** on page 6-10).
- Old Draw file -- **.bin** This file is not displayed if the **.gfx** file is found.

Video Resolution

SiteScan 2000 for Windows supports video resolutions other than 640x480. At higher resolutions, the button bar is centered at the bottom of the screen and the frames and windows increase in size to display larger graphics and more text for parameter pages. To display a higher video resolution, both your video card and your monitor must be capable of displaying that higher video resolution. Consult your Windows User's Guide for more information on changing your video resolution.

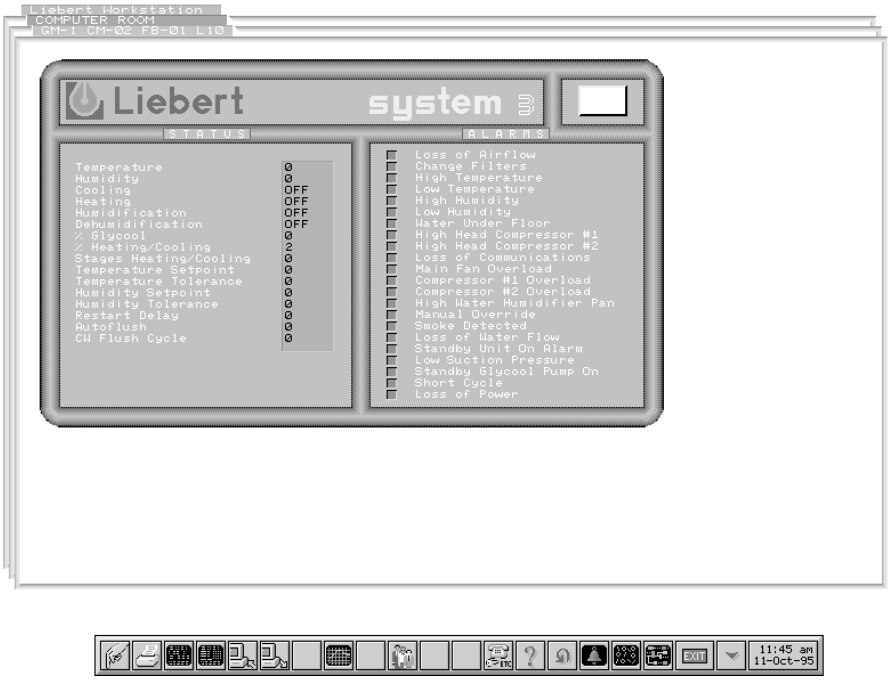


Figure 2-6: Sample frame at 800x600

Utilities

The Utilities menu allows you to access various features of SiteScan 2000 for Windows software. These features can also be accessed by using manual commands. Keep in mind, however, that certain features are password protected. See the section **Passwords** on page 3-34 for more information.

Figure 2-7: The Utilities menu

Using the Workstation

A Workstation is essentially a desktop computer with a number of unique features (software and enhanced graphics capability) plus some familiar accessories. These usually include one or more modems, a high resolution color monitor, a hard disk, a printer, and a mouse.

Given the normal care and respect which should be given to any precision piece of equipment, your Workstation should function properly for a long time. Like most computers, it is practically impossible to damage the computer and accessories by making incorrect entries from the keyboard. Also like most computers, the software it contains can very easily be damaged or destroyed by making incorrect entries from the keyboard.

Because of this, you should backup your System files on a regular basis and store the backup floppies in a secure place away from the Workstation.

Precautions

Since the heart of your Workstation is an IBM compatible computer operating on Microsoft Windows, there are many third party software programs which will operate on the Workstation computer. There is no

problem with running these programs so long as the following cautions are observed.

Caution No. 1: Do not add files to the **\ss2000** directory or its sub-directories.

Reason: The files in these directories are specifically for SiteScan 2000 for Windows operation and may be unique to a particular version of the software. When version updates are necessary, **\ss2000** and any subdirectories (except System files) are subject to be replaced by a version update or a supplemental disk update. If you have added files to these directories they may be overwritten.

Caution No. 2: Be particularly careful when using DOS commands, especially **format**, **delete**, and **erase**.

Reason: With adequate backup files you can usually recover from improper use of these commands but the cost in time and dollars could be extensive.

How to use Help

Overview

On-line Help is a feature provided by Windows which allows you to view a comprehensive text file from any level of the system. The On-Line Help is a Windows Application, so all the standard Windows techniques for moving, resizing, and closing the Help window apply. For a complete description of all the features included in the On-Line Help, press **F1** twice. To return to the On-Line Help after reading the Windows Help instructions, pick the **Index** button in the Help Window.

SiteScan 2000 for Windows Help

The SiteScan 2000 for Windows Help is a comprehensive hypertext file which is available from any level of the system. It describes the various functions and features of SiteScan 2000 for Windows and how to use them. SiteScan 2000 for Windows provides context-sensitive help, which means that the On-Line Help jumps to the topic in the help file which best applies to where help was launched.

If your screen is large enough, you can launch Help and use SiteScan 2000 for Windows at the same time by resizing both windows so that

they don't overlap. To work with overlapping windows, press **Alt+Tab** to switch back and forth between the windows.

To access Help

1. Choose **Help**, **Index** from the main menu, or pick the **Help** button, or press **F1**, or issue the **Help** manual command. The On-Line Help program launches and then loads the help file and jumps to the topic which best applies to where help was launched.

NOTE SiteScan 2000 for Windows remains connected to the System when On-Line Help is launched.

---

2. To jump to the Help file's list of main topics, pick the Contents button.
3. To view a different Help file, choose **File**, **Open** from the Help main menu and double-click on the desired **.hlp** filename.
4. To close the On-Line Help program and return to SiteScan 2000 for Windows, choose **File**, **Exit** from the Help main menu.

FB Help

Function Block Help, or FB Help, is a help file specific to a particular Function Block. This feature allows each Function Block to have its own help file (**xxx.hlp** file where xxx is the three-character Function Block name) which can be accessed from within SiteScan 2000 for Windows. Help files for module driver Function Blocks are included with SiteScan 2000 for Windows 2.0 or later. Contact your dealer for Help files for other Function Blocks. FB Help files must be stored in the **ss2000\xxx\m68** directory (where xxx is the three-character System name), or in the **\ss2000\m68** directory.

To access FB Help

SHIFT **+**

1. Hold **Shift** and pick the **Help** button, or press **Shift** and **F1**, or issue the **FBHelp** manual command. The On-Line Help program launches and then loads the **xxx.hlp** file (where xxx is the three-character Function Block name).

NOTE SiteScan 2000 for Windows remains connected to the System

when On-Line Help is launched.

2. To jump to the Help file's Table of Contents, pick the **Contents** button.
3. To view a different Help file, choose **File**, **Open** from the Help main menu and double-click on the desired **.hlp** filename.
4. To close the On-Line Help program and return to SiteScan 2000 for Windows, choose **File**, **Exit** from the Help main menu.

Jumping through Help

Words with a solid underline are "jumps" that display the Help topic they name. To use a jump to move to another topic, do one of the following:

- Pick the underlined topic, OR
- Press the **Tab** key until the underlined topic is highlighted, and then press **Enter**.

Using the Help Commands and Buttons

At the top of the Help window are menus of commands and buttons. Here is a summary of the commands and buttons used most often.

Table 2-2: Help Commands and Buttons

Help Command or Button	What it does
Open command (File menu)	Lets you open any Windows Help file in the Help window.
Print Topic command (File menu)	Prints the displayed Help topic for easy reference.
Copy command (Edit menu)	Copies the displayed Help topic to the Clipboard (so you can paste it into another Windows application).
Annotate command (Edit menu)	Lets you add your own notes to the displayed Help topic.
Define command (Bookmark menu)	Adds the title of the topic (or a name you type) to the Bookmark menu so you can display that topic by choosing its name from the menu.
Index button	Displays the Help Index.
Back button	Displays the previous topic you looked at, so you can backtrack through the Help screens.

Table 2-2: Help Commands and Buttons

Search button	Displays a dialog box where you can type keywords or select keywords to search for related Help topics. If you type a keyword and Help finds no match, the program displays the topics that are closest in alphabetical order.

Button Identification

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21

These are the buttons which can be displayed in SiteScan 2000 for Windows. Some buttons, however, can be displayed only when certain conditions exist.

You can use the **menu** manual command to swap between displaying the SiteScan 2000 for Windows screen with the main menu or with the buttons at the bottom of the screen. Also, the **menu** line in the **alc.ini** file defines whether SiteScan 2000 for Windows opens by displaying the main menu or the buttons. The default is **no** which displays the buttons.

BUTTONS:

1. Manual Command
2. Print
3. Status Page
4. Parameter Page
5. Upload
6. Download
7. (reserved for future use)
8. Trends
9. (reserved for future use)
10. Groups (optional feature)
11. Schedules (optional feature)
12. Schedule Graph (optional feature)
13. Utilities
14. Help
15. Return
16. Alert or Alert EL
17. Point Help
18. Live GFB

19. Exit
20. Minimize
21. Time and Date -- This button updates every minute. For an immediate update, click on it.

* * *

3 Activities

Commands

Manual Commands

Several commands can be issued manually from within SiteScan 2000 for Windows. These commands can be used to help make system operation more efficient. SiteScan 2000 for Windows will accept as few characters as is necessary to understand a command.

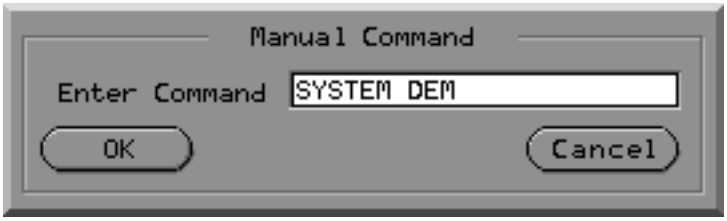


Figure 3-1: Manual Command pop-up

about This command causes SiteScan 2000 for Windows to briefly display the title screen which appears when the program is first started.

alert This command causes SiteScan 2000 for Windows to launch Alert or Alert EL. If the program is already loaded, it comes to the foreground.

The SiteGate-232 always has a gateway module number of 1.

(command) ln,gm,cm,fb This command takes you directly from where you are to the address listed, where the (command) is listed below. The **ln** is the line number listed on the Connections Page, **gm** is the gateway module number, **cm** is the module number, and **fb** is the Function Block number within that module. When moving within the same line and gateway number, the line number (ln) and the gateway module number (gm) can be omitted, leaving the commas (see example).

If you are on-line with one System and enter a command with an address from another System, the Workstation will disconnect, then connect to the new System and display the equipment graphics screen of the new FB. If there is no equipment graphics screen associated with that FB, the Status page will be displayed.

Table 3-1: Manual Commands which can Accept an Address

Command	Destination
addr	Area or FB frame
gro	Groups (for the entire line number)
liv	Live GFB
mod	Module Status
par	Parameters page
poi	Point Help
sch	Schedules
setp	Setpoints
sta	Status page

This command has several variations, as noted below:

> **Example**: **addr 1,1,3,4** displays the frame for the node having the indicated address.
>
> **Example**: **par ,,3,4** displays the parameter page of the FB.
>
> **Example**: **sta ,,cm,cp+1** displays the status page of the next FB with a greater address in the module, if it exists. The "**cp+1**" must be typed as shown.

connections This command displays the Connections page, where SiteScan 2000 for Windows stores connection information such as phone numbers, time zones, and baud rates. The Connections page requires a password level of 8 or higher.

defaultparameters This command restores a Function Block's default parameters (defined when the FB is created in Eikon by Liebert Site Applications) in the System's database structure files (**xxxcnfig.dat**, **xxxparam.dat**). To use this command, an FB-level

screen must be displayed, but not one which allows parameters to be changed. This command may be issued, for example, before downloading parameters in order to reset corrupted parameters in the module back to the defaults. **Extreme care should be taken when using this command**. If an error is made, exit SiteScan 2000 for Windows without updating configuration text, then recompile configuration text. This process replaces the modified database structure files with unmodified ones. This command requires a password level of 8 or higher.

dlallmarked This command causes SiteScan 2000 for Windows to download memory, parameters, or schedules for all the marked FBs on the current line number before disconnecting and moving on to the next line number. This command saves on time and long-distance charges for systems having multiple installations.

dlpause This command prevents SiteScan 2000 for Windows from downloading immediately after an **edit** or **set** command is issued. Instead, the affected FB is marked for a parameter download. This command stays in effect until the **dlunpause** command is issued or until SiteScan 2000 for Windows is closed.

dlunpause This command allows SiteScan 2000 for Windows to download parameters immediately after any new **edit** or **set** commands are issued. Issuing this command does not cause SiteScan 2000 for Windows to download previously marked FBs. This command stays in effect until the **dlpause** command is issued or until SiteScan 2000 for Windows is closed.

edit This command allows you to edit an individual parameter from anywhere in the system. When this command is issued for an analog parameter, the edit parameter pop-up appears. When this command is issued for a digital parameter, no pop-up appears, but the parameter is toggled to the opposite state. If the edit is successful, the parameter is downloaded to the FB (see the **dlpause** and **dlunpause** commands). If the FB's frame is being displayed when the command is issued, it is updated immediately. The syntax for the command string is as follows:

edit <expression>

where, **edit fbidxxxxxxx**

- **fbid** This is the node ID name from the configuration text (used only if the value exists in a different FB).
- **xxxxxxx** This is the variable MBcode, or Field ID, for the parameter being edited.

Example: **edit $m017$lim** Edits the parameter in the current FB.

Example: **edit z4h15_1$flow$ovs** Edits the parameter for the FB having an FBID of **z4h15_1**.

For information about using command strings in graphics, see the section **The Pickable Window Function** on page 6-47.

SHIFT +

fbhelp This command brings up a Function Block Help file (if one exists) in a separate window. This command has the same result as pressing the **Shift** key while picking the **Help** button or **F1** key. See the section **How to use Help** on page 2-26 for more information.

global-modify This command activates the global modify feature, which allows you to modify parameters for many Function Blocks at once.

go (node id name) This command takes you directly to the desired node in the system. The node ID name for Function Blocks is defined in the configuration text and can be found on both the FB's Parameter and Status screens.

help This command brings up the SiteScan 2000 for Windows Help file in a separate window. This command has the same result as pressing the **Help** button or the **F1** key. See the section **How to use Help** on page 2-26 for more information.

live-gfb This command, when issued at the Function Block level, displays a Live GFB for that particular Function Block. If the Live GFB does not exist, an error message appears. This command has the same result as pressing the **Live GFB** button.

mark This command displays the **Mark** pop-up which allows you to mark or unmark modules for downloading memory, parameters, and schedules. This feature makes marking and downloading an easy, two-step process. See the section **Marking** on page 5-11 for more information.

menu This command swaps between displaying the SiteScan 2000 for Windows screen with the main menu or with the buttons at the bottom. This setting is saved in the **alc.ini** file so that the same view is displayed the next time SiteScan 2000 for Windows is launched.

modstat This command displays the Modstat page which shows hardware and software information relevant to the current module.

passwords This command displays the Passwords page which stores the passwords for all the users in SiteScan 2000 for Windows. The Passwords page may be accessed by a Level 10 (Owner) only.

pointhelp This command displays the Point Help page, which allows Input and Output points to be easily configured and calibrated, eliminating the need to calculate offset and gain. This has the same result as pressing the **Point Help** button.

quit This command exits from SiteScan 2000 for Windows to the Windows Program Manager. This has the same result as pressing the **Exit** button. If you have made any changes while in the program, a pop-up asks if you want to update configuration text. Pick **Yes** or **No** as appropriate.

return This command can be issued multiple times to display up to eight of the previously viewed nodes in reverse order. This has the same result as pressing the **Return** button.

run This command allows you to enter the name of another Windows application which will run while SiteScan 2000 for Windows runs in the background. If the program cannot be located, an error message will appear. Note that if SiteScan 2000 for Windows is connected to a System, it remains connected while the specified Windows application is running. In fact, SiteScan 2000 for Windows may close if the **Auto Logoff** feature is enabled (see the section **The SiteScan Tab** on page 5-24 for more information).

Example: **run notepad c:\mystuff\memo1.txt**

runmin This command allows you to enter the name of another Windows application which will run while SiteScan 2000 for Windows runs *minimized* in the background. If the program cannot be located, an error message will appear. Note that if SiteScan 2000 for Windows is connected to a System, it remains connected while the specified Windows application is running. In fact, SiteScan 2000 for Windows may close if the **Auto Logoff** feature is enabled.

Example: **runmin notepad c:\mystuff\memo2.txt**

schedulepurge This command deletes all schedules from the node where the command was issued *and from all subordinate nodes*.

Subordinate nodes are those nodes defined in the system hierarchy (in the configuration text) as being children to the selected parent. This means that if the command is issued from the System level, all schedules in the system would be deleted. This command requires a password level of 8 or higher. ***Use this command with extreme caution.***

set This command allows you to set the values for multiple parameters from anywhere in the system. If the command is successful, the parameters are downloaded to the FB(s) (see the **dlpause** and **dlunpause** commands). If an affected FB's frame is being displayed when the command is issued, it is updated immediately. Multiple parameters can be changed as long as the length of the command does not exceed the maximum of 255 characters. The syntax for the command string is as follows:

set <expression> <value>

where, **set fbidxxxxxxx ###**

- **fbid** This is the node ID name from the configuration text (used only if the value exists in a different FB)
- **xxxxxxx** This is the variable MBcode, or Field ID, for the parameter being edited.
- **###** This is the new analog or digital value (whichever is appropriate) for the parameter.

Example: **set $m017$lim 16.25** Sets the parameter in the current FB to the value **16.25**.

Example: **set z4h15_1$flow$ovr y z4h15_1$flow$ovs on** For the FB having an FBID of **z4h15_1**, this command locks the fan status digital input to **on**.

For information about using command strings in graphics, see the section **The Pickable Window Function** on page 6-47.

setgcm This command downloads the following information to the gateway module: Workstation telephone number (located on the Connections Page), Maxnet, three-character System ID, and Connections Page line number.

setup This command displays the SiteScan 2000 for Windows Setup page which contains basic operational features. The Setup page requires a password level of 8 or higher.

system xxx This command causes SiteScan 2000 for Windows to change from the current System to System **xxx**. Memory can be downloaded to the modules in the second System. The **quit** command returns to the previous System. When switching from one System database to another, SiteScan 2000 for Windows flushes its internal FB cache. This action prevents confusion if an FB in the new System has the same name as an FB in the old System, but the new FB is different.

trenddemo This command displays a pop-up which allows you to set beginning and ending times and dates. When Demo mode is enabled, the Trend Graph uses this information to access and display the specified trend data from Trend Historian rather than uploading trends from the module(s). See the section **The SiteScan Tab** on page 5-24 for more information.

trends This command displays either the Standard Trend Graph or the New Trends menu screen, depending on whether the module is configured to display old-style FB trends. See the section **Trends** on page 3-57 for more information.

Note that trends can be gathered only from the line that you are currently connected to. To go directly to a particular trend display, use the following syntax:

trends #line#gcm#cm#fb#chan#exp

where **line** = line number, in decimal
gcm = gateway module number, in decimal
cm = module number, in decimal
fb = Function Block number, in decimal
chan = Channel number, in hexadecimal
exp = Expander number, in decimal

The string can be shortened by omitting certain items as shown:

trends ##gcm#cm#fb#chan#exp Use the current line.
trends ###cm#fb#chan#exp Use the current line and gateway.
trends ####fb#chan#exp Use the current line, gateway, and module.
trends #####chan#exp Use the current line, gateway, module, FB.

To select multiple trends, enter a space between each string:

trends #####41#0 ###3#1#21#1 This example will trend channel 41, expander 0 in the current FB and channel 21, expander 1 in module 3, FB 1 on the current line and gateway.

To Issue a Manual Command

1. Select **Utilities**, **Manual** from the main menu, or select the **Manual Command** button, or press the **Esc** key.
2. Enter a manual command.
3. Select **OK** to issue the command or **Cancel** to abort.

Connections Page

Overview

The Connections Page is where the Workstation stores information concerning phone numbers, time zones, baud rates, etc. To access the Connections Page, select **Utilities, Connections** from the main menu, or pick the **Utilities** button followed by the **Connections** option. The Connections Page requires a password level of 8 or higher.

The Connections Page has a button to display the Connection Configuration Page, which stores hardware port connection information for all Liebert Windows applications. For more information, see the section **Connection Configuration** on page 3-17.

NOTE Some information on the Edit Connections pop-up must match with corresponding information on the Connection Configuration Page. If they do not match when you attempt to connect to a System, SiteScan 2000 for Windows will display an error and will allow you to access the Connection Configuration Page so that you can update it. This could occur, for example, if you have changed the Connection Type or Baud Rate for a particular port on the Edit Connections pop-up but not on the Connection Configuration page.

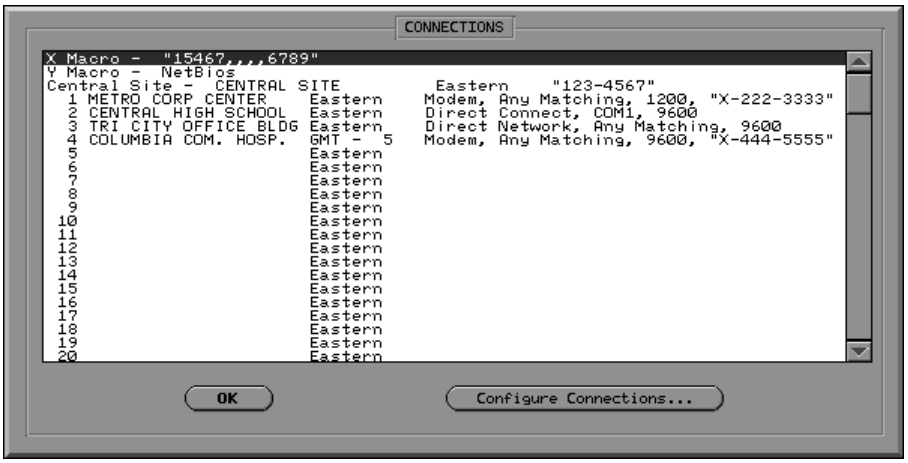


Figure 3-2: The Connections Page

In SiteScan 2000 for Windows Multiuser, the Connections Page may be in use by another user when you attempt to display it. You will be notified by a "Connections Lockout Advisory" error if this occurs, and you cannot access the Connections Page until the other user is finished with it. See the section **Navigating the System** on page 2-18 for more information.

Line-number

The first column of the Connections Page lists each site's line-number which is assigned sequentially for each installation as each job is designed. It is used as the first number of the four-part FB address. Up to 150 sites can be defined for each System.

The Workstation Connection

The third line is where the **Workstation telephone number** is assigned. This is the number which is downloaded to the gateway module when the **setgcm** command is issued. If the Workstation telephone number ever changes, you must change this line and reissue the **setgcm** command.

If you do not wish the gateway module to contact the Workstation (for example, when you are Direct Connected), enter this number on the Edit Connection pop-up as a space, then a dash followed by a few characters.

Example: -nodial

NOTE If the Workstation is modem connected or direct connected, select **None Specified** for the Workstation's Connection Type.

To configure the Workstation for a NetBios connection (i.e., the Workstation is connected directly to an LGnet), see the section **NetBios Connections** on page 3-13.

Using Macros

The "**X**" and "**Y**" lines are provided as macros for storing connection information which is common to multiple lines. After the macros have been defined, they can be placed in the **Phone Number** field for one or more lines. Each macro can be used to store prefixes to telephone numbers (such as area codes, discount phone service numbers, modem commands, etc.) or even to define alternate connection information. This method provides a convenient way to reconfigure many lines by changing one prefix rather than changing each line separately.

The normal syntax for a telephone number is as follows: X-###-Y

Example: X-123-456-7890-Y

Using a macro to define alternate connection information is useful when troubleshooting at the installation site with a portable computer (which may require a different Connection Type, baud rate, etc.). Note that a line always sends its own connection information before sending the **Phone Number** information. Therefore, if a phone number has a macro which contains connection information, the line will send its own connection information and then the macro's connection information. For this reason, when a macro is used only to define the **Phone Number** field, its Connection Type should be set to **None Specified**.

Long Phone Numbers

The Phone Number field for each line number can handle up to 20 characters. The "**X**" and "**Y**" macros can also store up to 20 characters each, for a total of 60 characters. Some of these characters are used when SiteScan 2000 for Windows appends a code for the connection type, serial port, and baud rate. Any commas used in the phone number also use up a character. However, most modems cannot handle more than 40 characters.

If you have a long phone number, such as for the 1-800 long distance access codes, instead use the five digit codes which accomplish the same thing. These numbers can be found in the phone book and must be followed by a zero and the phone number, not a one and the phone number like the 1-800 access codes.

Here are some of the most common used:

- **AT&T: 10288**
- **MCI: 10222**
- **Sprint: 10333**

Example:

Line Number 1 -- Modem Connect, Com1, 9600 baud, Phone no: **9XY** (total characters = 7 because "MC14" is appended)

X Macro -- **1028807778889999,,** (total characters = 18 -- uses the AT&T code)

Y Macro -- **123456789012345** (total characters = 15 -- sample credit card no.)

Total number of characters = 40

Site Name

The second column of the Connections Page lists the site name which is assigned when the job is designed. This name may describe the site in more detail than what may appear in the tab label and can be changed without affecting the tab label.

Time Zone

The third column of the Connections Page indicates in which time zone the site is located. The time zone may be displayed as one of the four North American time zones or as a number representing the **GMT Offset** (GMT stands for Greenwich Mean Time). These selections may be changed on the Edit Connection pop-up and range from +12 to -12. For the correct GMT Offset for your area, contact a nearby weather installation or government office.

The Timeset Feature

If the Timeset feature is enabled (see the section **The SiteScan Tab** on page 5-24), then whenever the Workstation connects to a gateway module, the Workstation compares its current date and time with that of the gateway module. If the time and date difference is less than or equal to 15 minutes, an automatic synchronization broadcast is made. If the difference is greater than 15 minutes (adjusted for time zone variations), SiteScan 2000 for Windows may ask if you want to reset the module clock, depending on how the **Errorwait** command is set (see the section **The SiteScan Tab** on page 5-24).

If you answer **yes**, the Workstation's time and date is sent to the gateway module, thereby synchronizing all the modules on the CMnet. If you answer **no**, the time and date on the System remains unchanged.

Connection Information

The fourth column of the Connections Page lists the connection information for each installation. It includes the type of connection, and if it is not a NetBios connection, it also lists the port connection, the baud rate, and the telephone number (for modem connections only). Note that Direct Network connections cannot be used to receive alarms.

NetBios Connections

If a Workstation must communicate with the DCLAN(s) across a router, the TCP/IP protocol must be used.

To configure a line for a network connection, select **NetBios** on the Edit Connection pop-up and pick **OK**. Then pick **Configure Connections** to specify which console number to use. For example, if the DCLAN has console 3 defined as "NetBios," pick the **Add** button and enter 3 for the console number. The DCLAN console numbers are set up using DCCONFIG. A baud rate is not required for a network connection.

NOTE A network connection requires that the Netbeui or TCP/IP stack be loaded when the Workstation is powered up.

Communicating at 38.4k Baud

SiteScan 2000 for Windows uses the Windows communication driver (**comm.drv**). To communicate at speeds greater than 19.2k baud, the Workstation serial card must have high-speed UARTs (for example -- 16550A) installed.

The Edit Connections Pop-up

The Edit Connections pop-up appears when you double-click on a line on the Connections page. It allows you to define connection information for SiteScan 2000 for Windows.

NOTE Some information on the Edit Connections pop-up must match with corresponding information on the Connection Configuration Page. If they do not match when you attempt to connect to a System, SiteScan 2000 for Windows will display an error and will then automatically display the Connection Configuration Page so that you can update it. This could occur, for example, if you change the Connection Type or Baud Rate for a particular port.

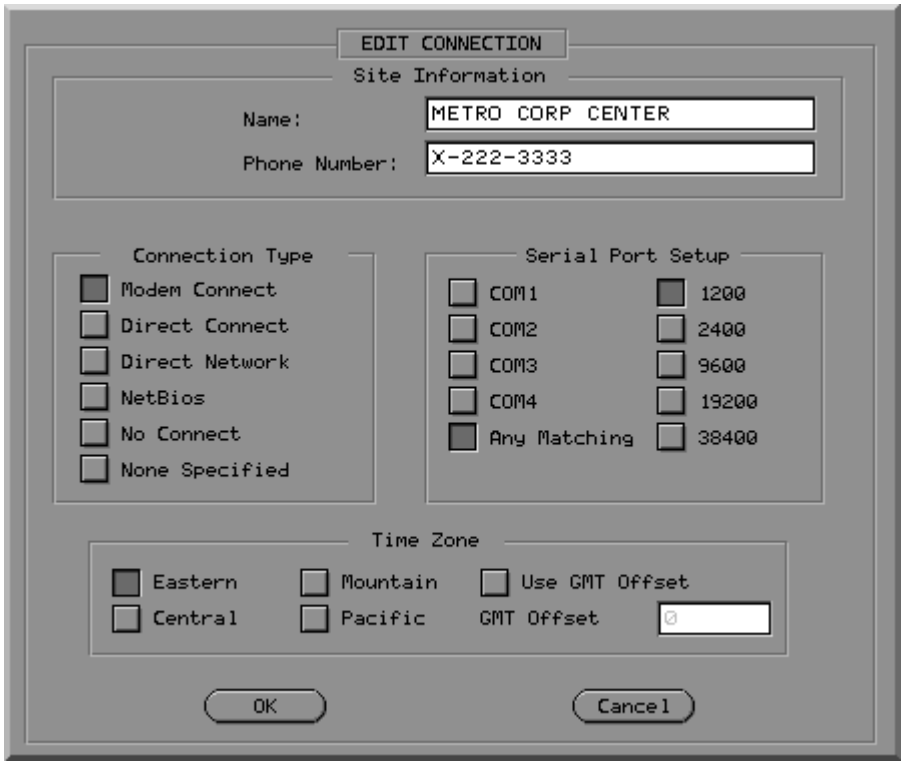


Figure 3-3: The Edit Connection Pop-up

The Site Information Section

This section allows you to define up to 20 characters for the name of the installation and for the phone number for the selected line. The name is listed only on the Connections Page and does not affect the tab label. If an **X** or **Y** macro which contains connection information is used in the phone number, the Connection Type for the line using the macro should be set to **None Specified**.

The Connection Type Section

This section allows you to select the mode that SiteScan 2000 for Windows will use to communicate with the selected line. This connection type must match a physical connection defined on the Connection Configuration page. Otherwise, SiteScan 2000 for Windows will display an error and allow you to change the Connection Configuration page when you attempt to connect to a System.

Modem Connect -- Use this setting when SiteScan 2000 for Windows connects to a System using a modem.

Direct Connect -- Use this setting when SiteScan 2000 for Windows connects to a System directly through an EIA-232 port on a gateway module.

Direct Network -- Use this setting when SiteScan 2000 for Windows connects to a module using a direct network cable. Note that direct network connections cannot be used to receive alarms or to get colors.

NetBios -- Use this setting when SiteScan 2000 for Windows connects to a System using the NetBios interface over an Ethernet or Token Ring local area network (requires separate purchase of network options for the DCLAN and for the Workstation).

No Connect -- Use this setting when you want SiteScan 2000 for Windows to store other connection information, but you do not want it to connect to a System.

None Specified -- Use this setting when the connection information is specified in a macro which is used in the phone number.

The Serial Port Setup Section

This section allows you to define the connection and baud rate that SiteScan 2000 for Windows searches for when you attempt to connect to a System.

COM1 through **COM4** -- Use one of these settings to define a specific serial port on the Workstation.

Any Matching -- Use this setting to allow SiteScan 2000 for Windows to search for any connection defined on the Connection Configuration page (that has **Monitor this port** disabled) which matches the baud rate and connection type. If the connection type is configured for modem connect, SiteScan 2000 for Windows will search for an open matching connection. If none is found, it will search for the next available modem of a higher baud rate.

Baud Rates -- Use one of these settings to define a specific modem baud rate. Note that a serial port configured for 19200 baud may use a 14400 baud modem on the Connection Configuration page.

The Time Zone Section

This section allows you to specify the time zone of the installation. The time zone may be displayed as one of the four North American time zones or as a number representing the **GMT Offset** (GMT stands for Greenwich Mean Time). These selections may be changed on the Edit Connection pop-up and range from +12 to -12. For the correct GMT Offset for your area, contact a nearby weather installation or government office.

To Edit Connections

1. Select **Utilities, Connections** from the main menu, or pick the **Utilities** button followed by the **Connections** option.
2. Double-click on the new or existing line number to bring up the Edit Connection pop-up.
3. Make the changes. See the section **Using Macros** on page 3-10 for more information concerning macros.

NOTE The information in the Connection Type and the Serial Port Setup sections must match the information on the Connection Configuration Page.

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4. Select **OK** to save the changes or **Cancel** to abort.

Connection Configuration

The Connection Configuration Page stores hardware port access information for Liebert Windows applications. Once configured, it functions as an arbitrator by guarding access to the limited number of serial port or network connections. It also provides for device independence by allowing a program to select the next available matching connection when sending outgoing data. To access the Connection Configuration Page, pick **Configure Connections** from the Connections Page.

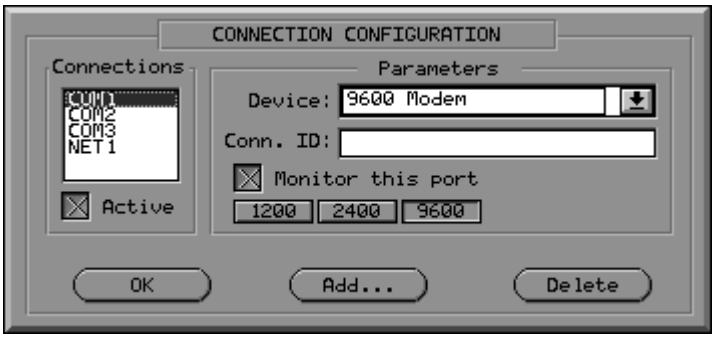

Figure 3-4: The Connection Configuration Page

To Configure Connections

1. Select **Utilities, Connections** from the main menu, or pick the **Utilities** button followed by the **Connections** option.
2. Pick **Configure Connections** in the lower right corner of the pop-up.
3. Make the desired changes for Connections, Device, and Connection ID.
4. Select **OK** to save the changes.

Connections

This section of the Connection Configuration Page identifies which port connections exist on the computer. Because these connections usually correspond to hardware devices installed on the computer, connections should not be added or deleted unless a hardware device is removed or installed.

The **Active** button can be enabled or disabled for each connection. It specifies whether the connection is no longer valid for Liebert software. This feature is useful when other Windows applications may need to use a particular connection temporarily without interference from Liebert software. The items in the Parameters section can be changed only when the **Active** button is enabled.

To Add a Connection

1. Select **Utilities, Connections** from the main menu, or pick the **Utilities** button followed by the **Connections** option.
2. Pick **Configure Connections** in the lower right corner of the pop-up.
3. Pick the **Add** button. The Add Connection pop-up will appear.
4. Select **COM Port** if the connection is through a computer's serial port, or **Net Console** if it is a network connection.
5. Type the Serial Port number or the DCLAN Console number in the appropriate field. Port numbers and console numbers default to the next available number. Numbers are limited to 1-16. For Serial Ports it is unlikely that a number greater than 4 is valid except where special serial hardware drivers are installed.

NOTE DCLANs store alarms generated from Alert microblocks on consoles 1-4 only.

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6. Select **OK** to save the changes or **Cancel** to abort.

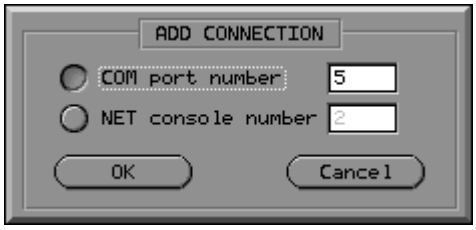


Figure 3-5: The Add Connection pop-up

To Delete a Connection

1. Select **Utilities, Connections** from the main menu, or pick the **Utilities** button followed by the **Connections** option.
2. Pick **Configure Connections** in the lower right corner of the pop-up.
3. Select the connection (in the Connections section) to be deleted.
4. Pick the **Delete** button. A pop-up will ask if you are sure you want to delete this device.
5. Pick **Yes** to continue or **No** to abort.

Parameters

This section of the Connection Configuration Page identifies the device parameters which are associated with the connection currently selected in the left box. The items in this section affect only the connection currently selected and can be changed only when the **Active** button is enabled for that connection.

The **Device** parameter specifies the type of device associated with the connection currently selected. Because this parameter corresponds to hardware devices connected to a computer port, it should not be changed unless a wire is physically moved. A new device which is not listed in the pull-down box can be entered by typing it in the field.

Note that a serial port configured for 19200 baud on the Edit Connection pop-up may use a 14400 baud modem on the Connection Configuration page.

NOTE The **Device** parameter must match the corresponding setting on the Edit Connection pop-up. If you change the **Device** parameter, you must make the same change on the Edit Connection pop-up so that SiteScan 2000 for Windows can find that device. Otherwise, SiteScan 2000 for Windows will give you an error when you connect to a System.

Connection ID

The **Conn. ID** parameter is an optional parameter which allows you to assign a name to the connection currently selected. Some Liebert software programs (such as Alert) can be configured to search for a specific Connection ID when sending outgoing data. If multiple connections have the same Connection ID, the program uses the first available one. Note that when searching for a connection to use, Liebert applications first search for connections which do not have the **Monitor this port** button enabled.

Monitor this port

The **Monitor this port** parameter specifies that the connection currently selected will be monitored by Alert Server for incoming communications (such as alarms, messages, trend reports, etc.). If a connection has this parameter disabled, then Alert Server ignores it. When this parameter is enabled for a serial port connection, several buttons appear for various baud rates. Alert Server will monitor a connection only at the selected baud rate.

The **Monitor this port** button is disabled for Direct Network connections because they cannot be used to receive alarms.

When searching for a connection to use for outgoing data, Liebert applications first search for connections which do not have the **Monitor this port** button enabled.

NOTE DCLANs store alarms generated from Alert microblocks on consoles 1-4 only.

Alert Server *continuously holds open* the Com or NetBios ports which have the **Monitor this port** setting enabled on the Connection Configuration page. Alert Server closes these ports only when the **Monitor this port** setting is disabled, or when another Liebert application needs access to the port. This approach provides several advantages, such as:

- Less time is used connecting and disconnecting from the NetBios port, allowing Alert Server to check for alarms more frequently without slowing the NetBios network. See the **Alarm Check** setting in the section **The Alert Tab** on page 5-31 for more information.
- Workstation modems can receive alarms at different baud rates.

Global Modify

Overview

The global modify feature allows you to quickly modify a large number of parameters and then download all the changes at the same time. Like schedules, global modify is only effective for the FBs at or below the level where global modify is launched. Note that global modify cannot be launched from a screen which allows parameters to be changed. Because of this feature's potential to change many areas, we recommend that you back up your System files before starting. This action will allow you to restore the original System files in case a mistake is made.

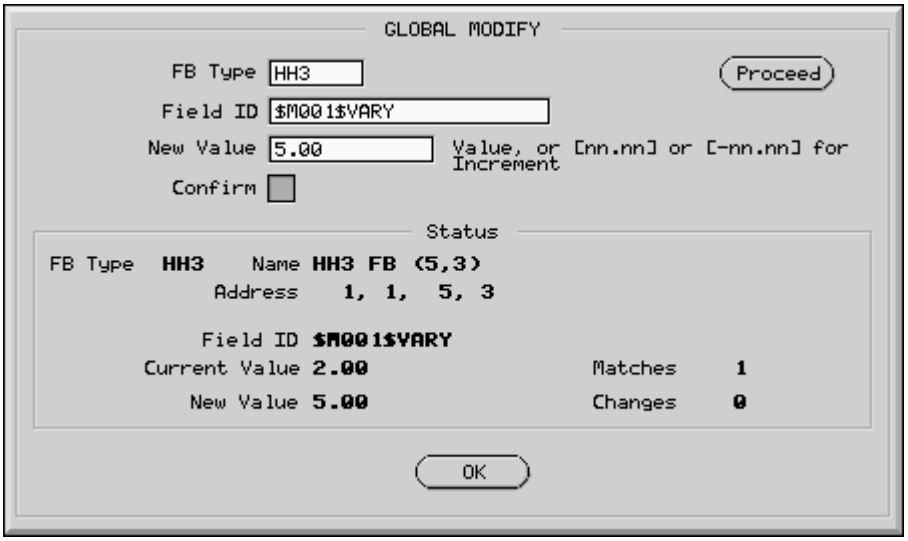


Figure 3-6: The Global Modify Screen

Changes made with global modify are made to the current System's compiled database structure files (**xxxcnfig.dat**, **xxxparam.dat**). Aborting the process midway through could leave some FBs changed and some unchanged. If this happens, exit SiteScan 2000 for Windows without updating configuration text, then recompile configuration text. This process replaces the modified database structure files with unmodified files.

If you discover a global modify error after the changes are downloaded, you may use global modify to reverse the process, or you can restore your System files and download again.

In SiteScan 2000 for Windows Multiuser, the global modify screen may be in use by another user when you attempt to display it. You will be notified by a "Lockout Advisory" error if this occurs, and you cannot access global modify until the other user is finished with it. We recommend using global modify when there are no other users in the System. See the section **Navigating the System** on page 2-18 for more information.

Global Modify Options

FB Type This field indicates the name of the Function Block(s) whose parameters you wish to change. Question marks can be used as wild cards to specify more than one type of FB. For example, if you wanted to change one or more Z4H Function Blocks, you would enter **Z4H**. But if you wanted to change every Function Block which ended with an "H", you would enter **??H**.

Field ID This field indicates the internal code for the parameter to be changed. Every parameter within an FB has a unique Field ID (part of which is the MBcode) which is displayed on a pop-up when a non-digital parameter is picked on the parameter page, or when any parameter is picked while holding the **Alt** key. The **Field ID** field automatically displays the code for the last parameter that was picked while the **Alt** key was pressed.

New Value This field indicates the value which will replace the existing parameter value. For example, to change a setpoint from 74 to 76 degrees, enter the value **76** here. If you want to increment the existing setpoint by a certain amount, you must follow the required syntax displayed on the parameter page. For example, to increase a setpoint by two degrees, enter **[+2.00]**. To decrease a setpoint by two degrees, enter **[-2.00]**.

Confirm This field determines whether the system pauses for your confirmation before making each parameter change. When Confirm is enabled (button pressed in), a pop-up appears asking for permission to make the change to the parameter displayed in the Status Area. Press **Ok** to make the change and continue, or press **Cancel** to skip the displayed FB and continue. Pressing the **Esc** key aborts the global modify process, but does not undo any prior changes. If **Confirm** is disabled (button out), the system will automatically make changes to all matching FBs when **Proceed** is selected. *Be careful with this feature!*

To use Global Modify

1. If SiteScan 2000 for Windows is already loaded, update the configuration text. Do this by selecting **Exit**, then answering

Yes to the pop-up which asks "Update configuration text?" (The pop-up only appears if changes have been made since SiteScan 2000 for Windows was started). This step allows you to undo any changes by recompiling the unmodified configuration text.

2. If further protection is desired, back up the System files for the System to be changed.
3. Start SiteScan 2000 for Windows and go to the level where you wish to make global changes. Like schedules, global modify is only effective for the FBs at or below the level where global modify is launched.
4. Select **Utilities**, **Global Modify** from the main menu, or select the Manual Command button (or press the **Esc** key) and type **glo**. This causes the Global Modify screen to be displayed.
5. Enter the values for the **FB Type**, **Field ID**, and **New Value** options. The **Field ID** field automatically displays the code for the last parameter that was picked while the **Alt** key was pressed.
6. Verify that **Confirm** is enabled (button pressed in).
7. Select **Proceed**. The first parameter matching the options will be displayed in the Global Modify Status area.

NOTE With SiteScan 2000 for Windows Multiuser, a pop-up warning will appear when an FB is being used by someone else. We recommend using global modify when there are no other users in the System.

---

8. Carefully observe the data appearing in the Global Modify Status area. The **Confirm** pop-up will appear, asking whether to make the change. If the proposed change is:
   - **incorrect** -- press the **Esc** key to abort the process, then go back to step 5.
   - **correct** -- select **Cancel** (to keep the change from being made yet). The next FB with a parameter matching the options is displayed in the Global Modify Status area.
9. Continue checking each FB until satisfied with the proposed changes. Aborting at any point (by pressing **Esc**) is OK because no changes have been made yet.
10. When you feel comfortable with the proposed changes, disable **Confirm** (button out).

11. Select **Proceed**. All the parameters matching the options are automatically changed. Function Blocks are "marked" as their parameters are changed.
12. To send the changes to the modules, select **Utilities**, **Download**, **Parameters**, **Marked FBs** from the main menu, or pick the **Download** button and select **Marked FBs** for Parameters.

Groups (Optional Feature)

Overview

SiteScan 2000 for Windows provides the option of grouping pieces of equipment as a group for scheduling purposes. This provides a particular advantage in planning for events which address an entire block of equipment.

NOTE The Groups and Scheduling features are optional and must be specified at the time of order.

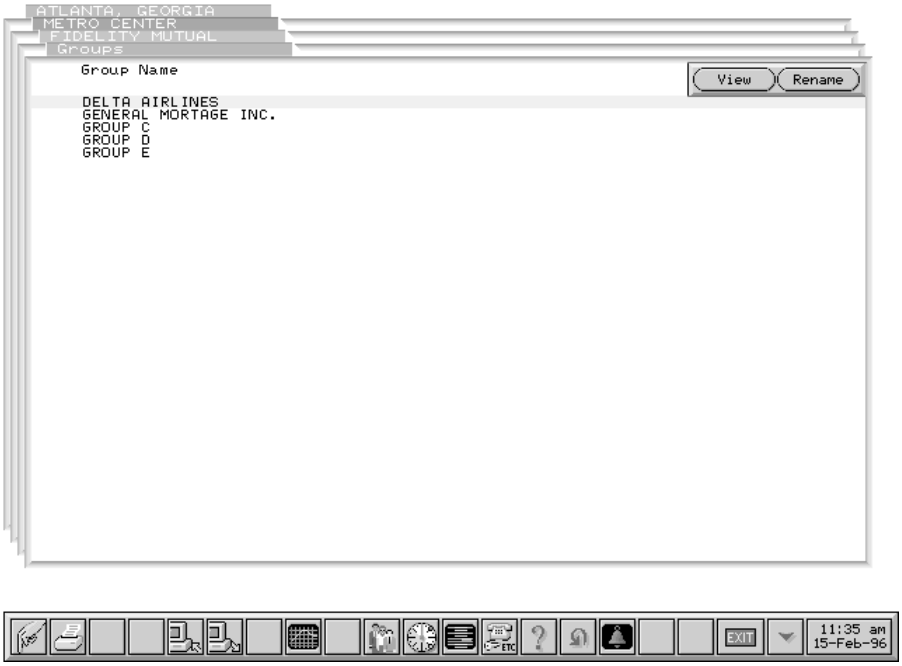


Figure 3-7: The Groups Page

For example, a data center may require a UPS room for power, a battery room for battery rack, common areas for entrances and exits, and the backup generators for continuous power.

The Groups Page displays all of the groups which exist for the current line number (see the section **Connections Page** on page 3-9). Groups are established when the job is designed. See your Liebert representative to add new groups. Groups can have up to 32 members, and groups can belong to other groups.

In SiteScan 2000 for Windows Multiuser, the Groups Page may be in use by another user when you attempt to modify a group. You will be notified by an error if this occurs, and you cannot access that group on the Groups Page until the other user is finished with it. See the section **Navigating the System** on page 2-18 for more information.

To Rename a Group

1. Select **View**, **Edit**, **Groups** from the main menu, or pick the **Groups** button. The Groups Page will display all of the groups which exist for the current line number.
2. Select the group you wish to rename, then pick the **Rename** button.
3. A pop-up will allow you to enter up to 21 characters for the new group title. Pick **OK** to accept the changes or **Cancel** to abort.

To Add a Group Member

1. Select **View**, **Edit**, **Groups** from the main menu, or pick the **Groups** button. The Groups Page will display all of the groups which exist for the current line number.
2. Select the group you wish to modify, then pick the **View** button. The Groups page will display the tab labels for all the current members of the group.
3. Pick the **Add** button. The **Add Member** pop-up will appear, displaying the tab label for every Area, FB, and Group at the current level and below.
4. Select the new member, then pick **OK** to accept the changes or **Cancel** to abort.

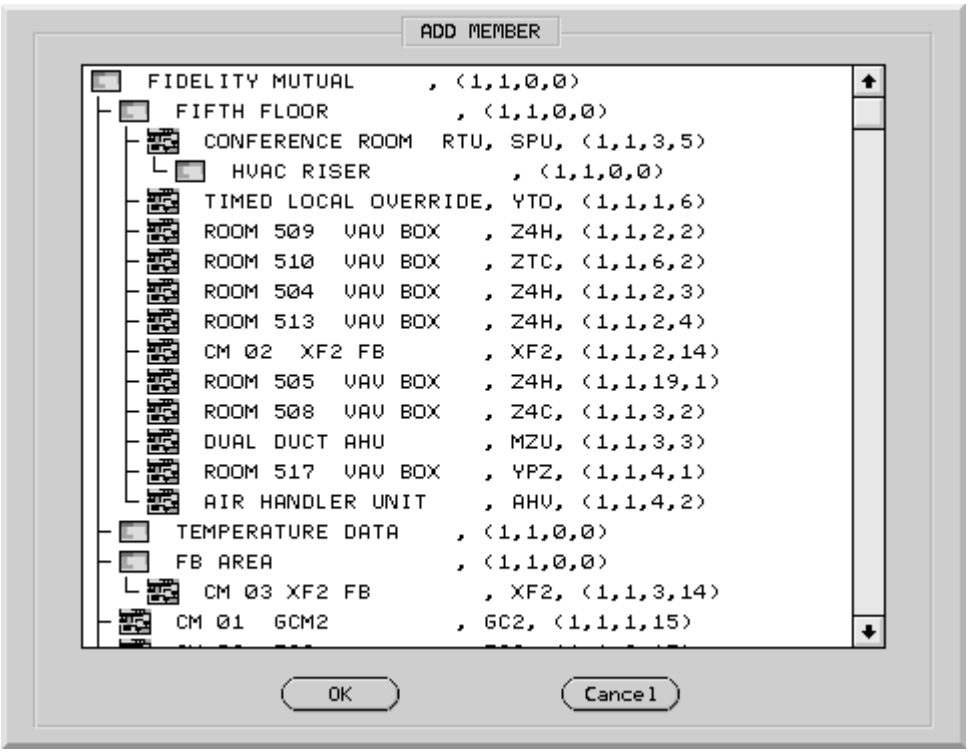

ADD MEMBER
FIDELITY MUTUAL , (1,1,0,0)
FIFTH FLOOR , (1,1,0,0)
CONFERENCE ROOM RTU, SPU, (1,1,3,5)
HVAC RISER , (1,1,0,0)
TIMED LOCAL OVERRIDE, YTO, (1,1,1,6)
ROOM 509 VAV BOX , Z4H, (1,1,2,2)
ROOM 510 VAV BOX , ZTC, (1,1,6,2)
ROOM 504 VAV BOX , Z4H, (1,1,2,3)
ROOM 513 VAV BOX , Z4H, (1,1,2,4)
CM 02 XF2 FB , XF2, (1,1,2,14)
ROOM 505 VAV BOX , Z4H, (1,1,19,1)
ROOM 508 VAV BOX , Z4C, (1,1,3,2)
DUAL DUCT AHU , MZU, (1,1,3,3)
ROOM 517 VAV BOX , YPZ, (1,1,4,1)
AIR HANDLER UNIT , AHV, (1,1,4,2)
TEMPERATURE DATA , (1,1,0,0)
FB AREA , (1,1,0,0)
CM 03 XF2 FB , XF2, (1,1,3,14)
CM 01 GCM2 , GC2, (1,1,1,15)
OK
Cancel

Figure 3-8: Add Group Member

Icons on the Add Member pop-up indicate the following items:

This icon indicates an Area.

This icon indicates a Function Block.

This icon indicates a Group.

To Delete a Group Member

1. Select **View**, **Edit**, **Groups** from the main menu, or pick the **Groups** button. The Groups Page will display all of the groups which exist for the current line number.
2. Select the group you wish to modify, then pick the **View** button. The Groups page will display the tab labels for all the current members of the group.
3. Select the member name to be deleted.
4. Pick the **Delete** button. A pop-up will ask if you want to delete. Pick **OK** to accept the change or **Cancel** to abort.

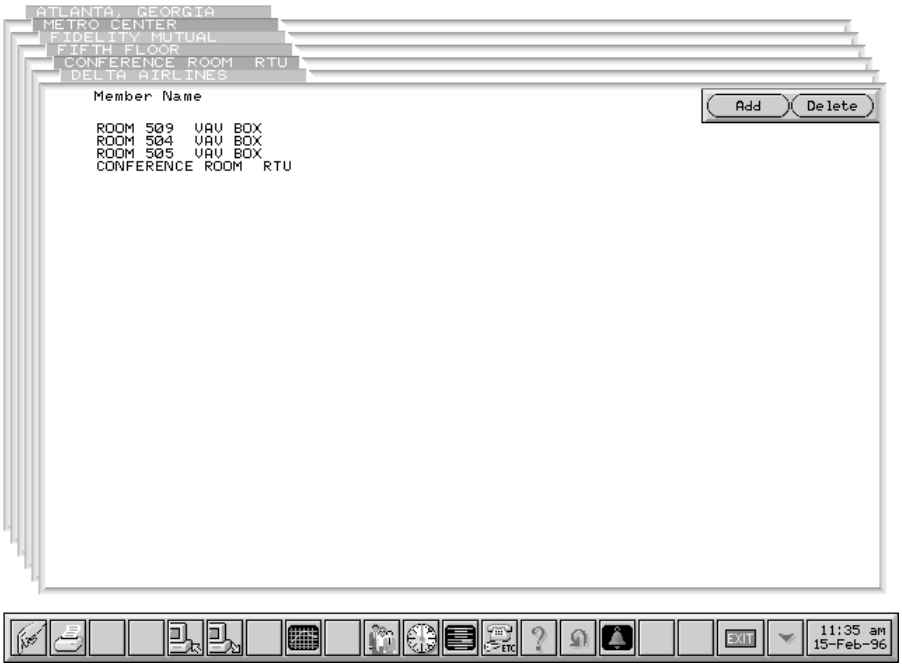


Figure 3-9: The Group Members Page

To Schedule a Group

1. From the level where the group exists, select **View**, **Edit**, **Groups** from the main menu, or pick the **Groups** button. The Groups Page will display all of the groups which exist for the current line number.
2. Select the group you wish to schedule, then pick the **View** button. The Groups page will display the tab labels for all the current members of the group.

3. Select **View**, **Edit**, **Schedules** from the main menu, or select the **Schedule** button. The screen will reveal all schedules currently established for the level identified by the tab directly above the SCHEDULES tab.
4. At this point, you may **Add**, **Modify**, or **Delete** a schedule for the group (see the section **Schedules (Optional Feature)** on page 3-42).

Live GFBs

Overview

The Live GFB feature allows SiteScan 2000 for Windows to display a Function Block graphically. Each section of programming code is represented graphically with a microblock. These microblocks transfer analog and digital data over wires represented by solid and dashed lines, respectively. Inputs are on the left and outputs are on the right. The arrangement of microblocks and wires is determined entirely by the Liebert engineer who makes the GFB in order to meet a sequence of operation.

NOTE The GFB logic (i.e., arrangement of a GFB's microblocks and wires) cannot be changed on the Live GFB screen. Call the Liebert Site Products Application Department for this purpose.

The Live GFB feature is similar to the simulation feature of Eikon. The simulator is a handy feature of Eikon which allows the Liebert engineers creating a GFB to test its operation. The main difference is that the Live GFB feature can display real, dynamically updated data, while the Eikon simulator displays only calculated values.

Dynamic updating is suspended if the graphic frame is not visible. For example, if another Windows application partially covers the frame, dynamic updating still occurs. But if the frame is completely covered, or if SiteScan 2000 for Windows is minimized, dynamic updating is suspended.

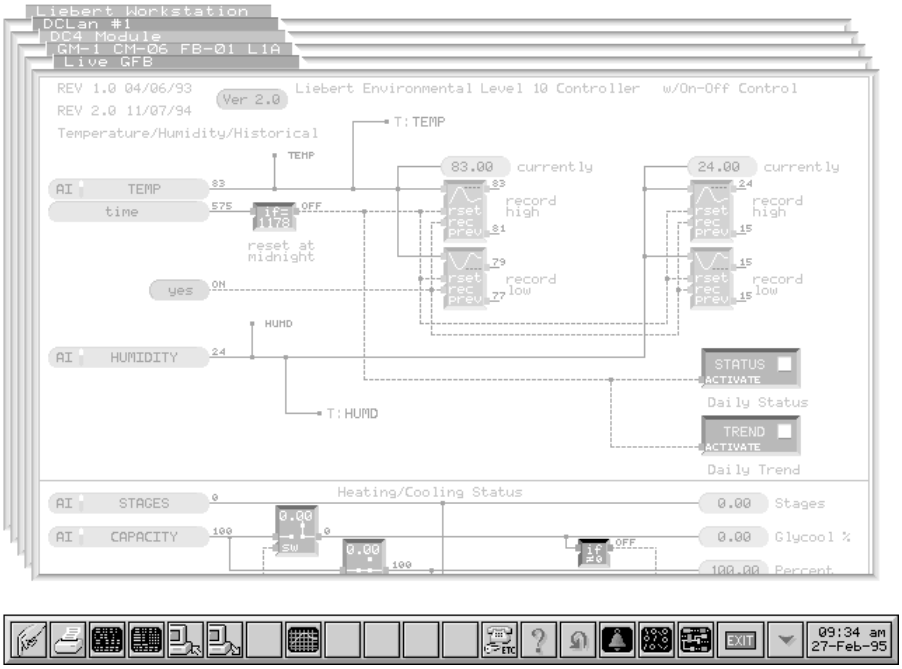


Figure 3-10: The Live GFB screen (colors inverted for display reasons)

In SiteScan 2000 for Windows Multiuser, a changeable FB-level screen may be in use by another user when you attempt to display it. For example, another user may be displaying a Parameter page when you try to access the Live GFB for that same Function Block. You will be notified by a "Parameters Lockout Advisory" error if this occurs, and you cannot change any part of that FB until the other user is finished with it. See the section **Navigating the System** on page 2-18 for more information.

NOTE Live GFBs are supported only by SiteScan 2000 for Windows V2.0 (or later) and Exec 4.0 modules (or later) which are downloaded with the corresponding V4.0 (or later) module driver.

To view a Live GFB

NOTE Before a Live GFB can be viewed in SiteScan 2000 for Windows, the setup procedure must be followed. The **Live GFB** button is enabled only at the FB level if the .**eik** file is packed into the .**fb** file.

---

1. Follow the procedure **To set up a Live GFB**.
2. Go to the Function Block level and pick the **Live GFB** button, or press **Esc** and enter the **live-gfb** manual command. The live Graphic Function Block will appear.
3. Use the **PgUp**, **PgDn**, and **arrow** keys on the keyboard to view parts of the Graphic Function Block not currently displayed on the screen.

To set up a Live GFB

NOTE Live GFBs will not display unless (1) the module is downloaded with the M68 files which came with SiteScan 2000 for Windows V2.0 or later, (2) the **eikserve.exe** file exists in the path or in the **\ss2000** directory, and (3) all GFBs have been packed and saved with the file extension of **filename.eik** by Liebert Site Applications.

The Live GFB button is disabled in SiteScan 2000 for Windows if the above steps have not been completed. This feature must be enabled by Liebert. If the Live GFB feature does not work, please contact Liebert Site Applications.

Features of the Live GFB Screen

Moving Around

Use the **PgUp**, **PgDn**, and **arrow** keys on the keyboard to view parts of the Graphic Function Block not currently displayed on the screen.

The Live GFB Buttons

The buttons on the Live GFB screen provide a great deal of control over the appearance of the data.

- The **Dynamic** button -- Pressing this button causes SiteScan 2000 for Windows to refresh the screen with live data from the module. The time between refreshes is determined by the **Rate** button.
- The **Rate** button -- Pressing this button allows you to specify how often SiteScan 2000 for Windows uploads data from the module for display on the Live GFB screen. Dynamic updating is suspended if the graphic frame is not visible.
- The **Static** button -- Pressing this button causes SiteScan 2000 for Windows to stop dynamically updating and to hold the current data on the screen.
- The **Again** button -- Pressing this button causes SiteScan 2000 for Windows to upload and display the current data directly from the module.

Parameter Mismatch

This Live GFB feature displays the values which exist in the module for the output(s) of each microblock. These values are normally displayed in **yellow**. However, if the parameters which exist in the module are not the same as the parameters stored in the computer, the microblock output values are displayed in **purple**. (This color change feature works the same way on a FB Parameter page.)

Therefore, when you change any parameter on the Live GFB screen, the color change to purple occurs immediately. To change the colors back to yellow, download any parameter changes to the module by leaving or refreshing the Live GFB screen. An easy way is to reselect the **Live GFB** tab or button.

If the microblock outputs are purple when the Live GFB is first displayed, use the following procedure.

1. Upload parameters from the module.

2. If the uploaded parameters are not correct, exit SiteScan 2000 for Windows *without updating configuration text*.
3. Compile configuration text.
4. Restart SiteScan 2000 for Windows and download parameters to the module.

If the microblock outputs display zeros, it is possible that the FB could not send the information to SiteScan 2000 for Windows quickly enough. See the **livegfbtimeout** setting in the section **The alc.ini File** on page 5-37 for more information.

Editable Parameters

This feature allows you to edit a Function Block's parameters from the Live GFB screen without having to go to the Parameter page. Any changes to parameters are automatically downloaded when you leave the Live GFB screen.

To edit parameters on the Live GFB screen, use the following procedure:

1. Go to the Function Block level and pick the **Live GFB** button, or press **Esc** and enter the **live-gfb** manual command. The live Graphic Function Block will appear.
2. Pick the desired microblock. If the microblock has editable variables, a pop-up will appear.
3. Make the desired changes to the appropriate field.

NOTE If your password level is lower than the password level of the microblock (defined in Eikon by Liebert when the FB is made), you can not make any changes to that microblock. Other variables can not be changed in SiteScan 2000 for Windows because they would require remaking the FB in Eikon by Liebert Site Applications.

---

4. Press the **OK** button on the microblock pop-up. If any parameter was changed, all of the microblock output values are displayed in purple until parameters are downloaded to the module.

5. To download any changes to parameters to the module, leave the Live GFB screen. An easy way is to reselect the **Live GFB** tab or button. Note that some of the variables on the pop-ups may not affect the Parameter page and do not require downloading.

Passwords

Using Passwords

A password is required when SiteScan 2000 for Windows is launched. This password is entered on the **about** dialog box which is displayed first. The password can be typed in while SiteScan 2000 for Windows is loading because it buffers the keyboard input. Pressing the **Esc** key before the password is entered causes SiteScan 2000 for Windows to abort loading.

The Password Page may be accessed with a Level 10 (Owner) password only. Because a password is required whenever someone enters SiteScan 2000 for Windows, owners have discretion over who may access certain parts of the system. Up to 32 passwords may be entered.

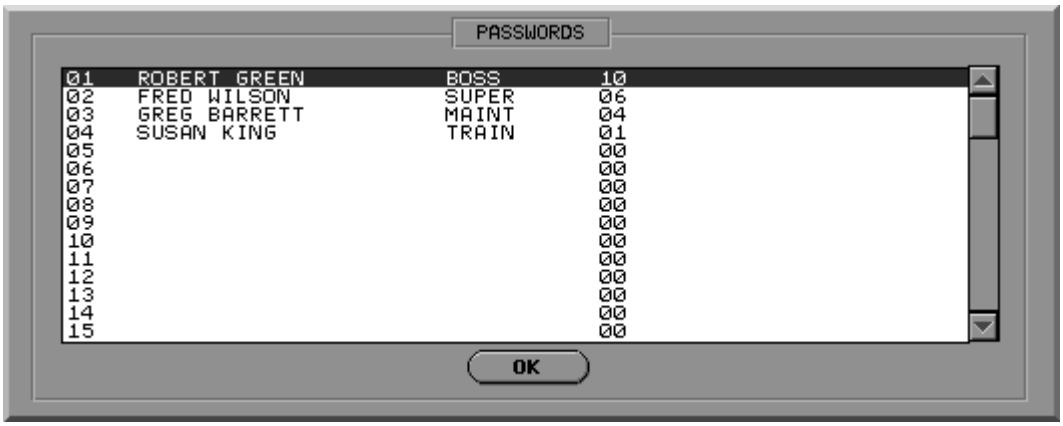


Figure 3-11: The Password Page

To Edit Passwords

1. Select **Utilities**, **Passwords** from the main menu, or pick the **Utilities** button then the **Passwords** option. The Passwords Page will display all of the operators who have a password defined.
2. Double-click on a new or existing operator name to bring up the **Edit Password** pop-up.
3. Type in the changes, then pick **OK** to save or **Cancel** to abort.
4. Record all password settings where you can find them if necessary.

Figure 3-12: The Edit Password pop-up

Password Levels

There are ten available password levels, with each succeeding level having a higher access. The default password levels are described as follows:

Table 3-2: Password Levels

Level	Description	Default Access
1	TRAINEE	The lowest password level; users entering SiteScan 2000 for Windows with this level password may only examine the system.
2	Unassigned	
3	MAINT-1	Users at this level may examine the system and change schedules.
4	MAINT-2	Users at this level may do the above and change setpoints.
5	Unassigned	
6	SUPRVSR	Users at this level may do the above and change parameters for microblocks assigned with this level of access (i.e., test color, PID, I/O points, send/receive requests, floating motor).
7	TRH-MAINT	Users at this level may do the above and access Trend Historian.
8	SYSTEM	Users at this level may change everything (except for Password Page) including the entire Parameter Page, Setup Page, and Connections page. Also allows access to **defaultparameters** and **schedulepurge** manual commands.
9	Unassigned	
10	OWNER	Users at this level may change everything, including the Password Page.

NOTE These are the default password assignments. Contact Liebert Site Applications for other password assignments.

Security

When SiteScan 2000 for Windows is first installed, the initial Owner level password is **ss2000**. Changing this password should be the first action after installation. In addition, it is important for high level password users to quit SiteScan 2000 for Windows when finished using it, so that unauthorized users may not access the program with that higher level password. (See the **Auto Logoff** feature in the section **The SiteScan Tab** on page 5-24).

In SiteScan 2000 for Windows Multiuser, the Password Page may be in use by another user when you attempt to display it. You will be notified by a "Passwords Lockout Advisory" error if this occurs, and you cannot access the Password Page until the other user is finished with it. See the section **Navigating the System** on page 2-18 for more information.

The passwords entered on the SiteScan 2000 for Windows Password Page are also used by Trend Historian. A password level of 7 is required in order to launch, maximize, or close Trend Historian. See the section **Trend Historian** on page 5-19 for more information.

Printing

When SiteScan 2000 for Windows is launched, it uses the default Windows printer. To change to a different printer, select **Utilities**, **Printer Setup** from the main menu, or press the **Print** button followed by the **Print Setup** button. Any changes in the Printer Setup remain in effect until SiteScan 2000 for Windows is closed.

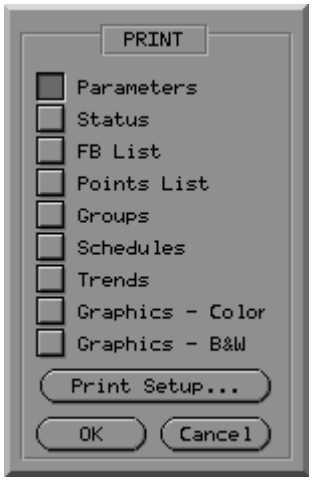


Figure 3-13: The Print pop-up

Parameters

Selecting **Utilities**, **Print** from the main menu, or selecting the **Print** button displays the Print pop-up. Picking **Parameters** causes SiteScan 2000 for Windows to print a text-only version of an FB's parameter page. This feature applies to every FB which exists at a lower level in the system's parental structure from where the selection is made. For example, if this selection is made at the area level, then parameters for all of the FBs under that area are printed. However, if the selection is made at the system level then parameters for all the FBs in the system are printed. If **All Options** is set to NO on a FB parameter page, then the print-out for that particular FB generally contains only the parameters which are not at default.

Status

Selecting **Utilities**, **Print** from the main menu, or selecting the **Print** button displays the Print pop-up. Picking **Status** causes SiteScan 2000 for Windows to print a text-only version of an FB's status page. This feature applies to every FB which exists at a lower level in the system's parental structure from where the selection is made. For example, if this selection is made at the area level, then status data for all of the FBs under that area are printed. However, if the selection is made at the system level then status data for all the FBs in the system are printed. Note that this feature prints the data as it currently exists in the module. If you want the status data as it appears on a screen, you must perform a **Utilities**, **Print**, **Graphics** for each screen.

FB List

Selecting **Utilities**, **Print** from the main menu, or selecting the **Print** button displays the Print pop-up. Picking **FB List** causes SiteScan 2000 for Windows to print a list of FBs which exist at a lower level in the System's parental structure from where the selection is made. The list includes each FB's address and the status of its prime variable. For example, if this selection is made at the area level, then only the FBs under that area are listed. However, if the selection is made at the system level, then all the FBs in the System are listed according to their position in the system's parental structure. Generally, FBs exist under areas, which exist under the system.

Points List

Selecting **Utilities**, **Print** from the main menu, or selecting the **Print** button displays the Print pop-up. Picking **Points List** causes SiteScan 2000 for Windows to print a list of the Input/Output points for the FBs which exist at a lower level in the System's parental structure from where the selection is made. This feature also prints each FB's address and the status of its prime variable, and each point's I/O code, channel number, and status. Otherwise, this listing is identical to the FB List.

Groups (Optional)

Selecting **Utilities**, **Print** from the main menu, or selecting the **Print** button displays the Print pop-up. Picking **Groups** causes SiteScan 2000 for Windows to print a listing of all the groups with their tab labels and the FBs which exist under each group.

Schedules (Optional)

Selecting **Utilities**, **Print** from the main menu, or selecting the **Print** button displays the Print pop-up. Picking **Schedules** causes SiteScan 2000 for Windows to print a list of the schedules for the FBs which exist at a lower level in the System's parental structure from where the selection is made. Function Blocks which belong to a scheduled group can be identified because they will all have a schedule in common with the other FBs in that group.

Trends

Current trend information can be printed for an FB at any time by selecting **Utilities**, **Print**, **Trends** from the main menu, or selecting the **Print** button and the **Trends** option. However, the output varies according to the type of trend which is active for the module (refer to the appropriate procedure below).

To manually print Trend data for New trends

NOTE This procedure can be performed only on Exec 4.x modules.

---

1. Configure the New trends according to the procedure "**Using New Trends**" on page 3-69.

2. Select **Utilities**, **Manual** from the main menu, or select the **Manual Command** button, or press the **Esc** key. Display the module driver Parameter page (FB #15) by entering the following command: **pa ,,(module no.),15**
3. Set "**All Options**" to "**Yes**".
4. Set the parameter "**This module should display old-style FB trends**" to "**No**". This causes every FB in the module to display New trends rather than Standard trends.

5. At the desired FB, select **Utilities**, **Print** from the main menu, or select the **Print** button to display the Print pop-up. Picking **Trends** causes SiteScan 2000 for Windows to display a screen with all available trended points for the current line number. Only points having their **Trend** parameter enabled and a channel number defined appear on the list. The tab label will display "Print Trends".
6. Select the trend to be printed by clicking on the point name. Choose **Accept** to print. The trend data is printed as a table of up to 288 data samples stored since the trend's interval parameter was last changed.

- To print the Trend Graph, display the Trend Graph (see section **Trends** on page 3-57) and select **Utilities**, **Print**, **Graphics - B&W** from the main menu.
- For information on printing Trend Reports automatically, refer to the *Alert EL User's Guide*.

To manually print Trend data for Standard trends

1. Configure Standard trends according to the procedure "**Using Standard Trends**."

2. Select **Utilities**, **Manual** from the main menu, or select the **Manual Command** button, or press the **Esc** key. Display the module driver Parameter page (FB #15) by entering the following command: **pa ,,(module no.),15**
3. Set "**All Options**" to "**Yes**".
4. Set the parameter "**This module should display old-style FB trends**" to "**Yes**". This causes every FB in the module to display Standard trends rather than New trends.

5. At the desired FB, select **Utilities**, **Print** from the main menu, or select the **Print** button to display the Print pop-up. Picking **Trends** causes SiteScan 2000 for Windows to upload from the module and print the data for each Standard trend having a trend code defined in the FB. The trend data is printed as a table of the values stored since the trend's interval parameter was last changed.
   - To print the Trend Graph, display the Trend Graph (see section **Trends** on page 3-57) and select **Utilities**, **Print**, **Graphics** from the pop-up menu.
   - For information on printing a Trend Report automatically, refer to the *Alert EL User's Guide*.

Graphics - Color

Selecting **Utilities**, **Print** from the main menu, or selecting the **Print** button displays the Print pop-up. Picking **Graphics-Color** (for a color printer) causes SiteScan 2000 for Windows to print a duplicate of the screen's current display. This feature is useful in obtaining a full color hard-copy of a color screen, such as the Schedule Graph, Trend Graph, Setup Page, Modstat, etc. The button bar is not printed, but the time the print was made is centered at the bottom.

Graphics - B&W

Selecting **Utilities**, **Print** from the main menu, or selecting the **Print** button displays the Print pop-up. Picking **Graphics-B&W** (for a black and white printer) causes SiteScan 2000 for Windows to print a duplicate of the screen's current display. This feature changes black to white and everything else to black. This feature is useful in obtaining a hard-copy of a screen, such as the Schedule Graph, Trend Graph, Setup Page, Modstat, etc. The button bar is not printed, but the time the print was made is centered at the bottom.

Schedules (Optional Feature)

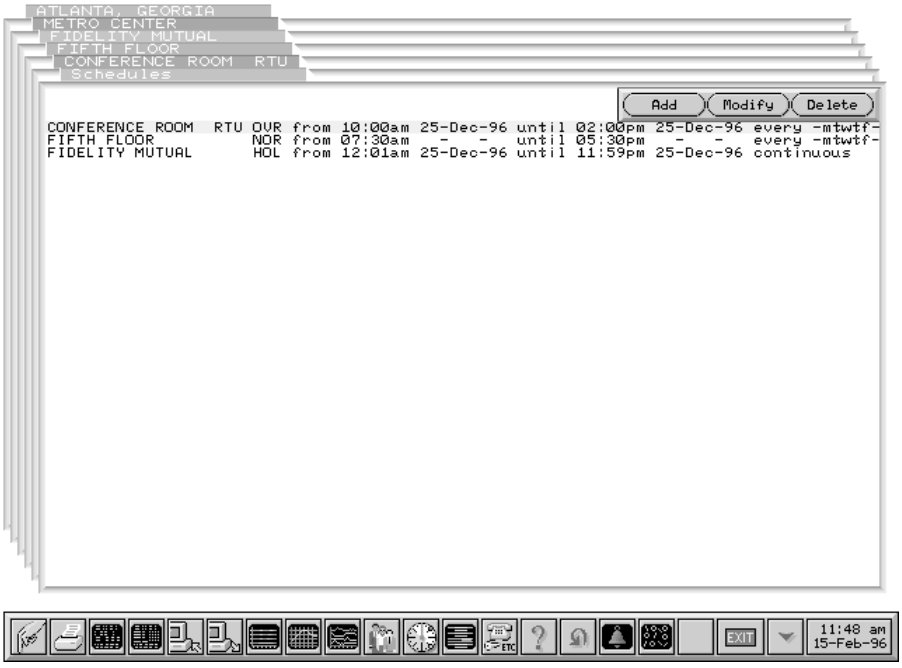


Figure 3-14: The Schedule Page

Overview

Efficient scheduling of space is one of the most effective means of conserving energy in any facility. SiteScan 2000 for Windows has a powerful scheduling capability. The key to this effectiveness is based on the occupancy schedule of the space.

Three types of schedules are available:

- **Normal** schedules: Schedules which accommodate normal occupancy of space. (Think of these as defining times when the spaces will normally be occupied.)
- **Holiday** schedules: Schedules which have higher priority than normal schedules. (Think of these as defining times when the normal occupancy schedule will be negated due to not being occupied.)
- **Override** schedules: Schedules which have the highest priority. (Think of these as defining times when holiday schedules are being overridden and the zone is occupied again.)

You can enter schedules for up to three years in advance. At any time you can request a graphic display of the schedules in effect for the current day and the next four days. Schedules are self-deleting (when they become obsolete due to passing their effective dates) and do not require file maintenance.

In SiteScan 2000 for Windows Multiuser, the Schedules Page may be in use by another user when you attempt to display it. You will be notified by a "Schedules Lockout Advisory" error if this occurs, and you cannot access the Schedules Page until the other user is finished with it. See the section **Navigating the System** on page 2-18 for more information.

Efficient Scheduling

The first step to efficient scheduling is to determine the most efficient point within the system to enter the schedule. If a schedule is entered at the **System** level, that schedule will be put into effect at all buildings and zones within the whole System. (This is advantageous in situations such as a "special holiday" which affects all the buildings in a System.) If a schedule is entered at a **Area** level it affects all zones within that area only; from a **Zone** or **Equipment** level it affects only that zone or specific piece of equipment; from a **Group** level it affects just those pieces of equipment which are in the group.

NOTE Schedulable Function Blocks (which are optional at time of order) can have 16 dated schedules (2 undated schedules equals 1 dated schedule).

The schedules displayed on the Schedule Page exist only in the workstation. These may be different from the schedules which exist in the module(s). If more than one person can download schedules, we advise uploading schedules before making any changes. Then when you download schedules, you will not inadvertently overwrite someone else's schedules.

The **schedulepurge** manual command can be used to delete all schedules from the node where the command was issued and from all subordinate nodes. Subordinate nodes are those nodes defined in the system hierarchy (in the configuration text) as being children to the selected parent. This means that if the command is issued from the system level, all schedules in the system would be deleted. ***Use this command with extreme caution.***

NOTE The **Operator Activity Recorder** (see the section **Setup Page** on page 3-53) can be used to determine details about schedule changes, including who, what, when, old, and new.

To Examine Schedules

1. Choose **View**, **Edit**, **Schedules** from the main menu, or pick the **Schedule** button. The Schedule Page will display the schedules which exist in the Workstation for the current level. The current level is identified by the tab directly above the SCHEDULES tab in the upper left corner of the screen.

-OR-

2. Choose **View**, **Edit**, **Schedule-Graph** from the main menu, or pick the **Schedule-Graph** button. The screen will graphically display all schedules which exist in the Workstation and in the module(s) for the current level. Any differences are indicated as "Inconsistent."

The Schedule Graph

The Schedule Graph allows you to graphically compare all of the schedules which exist in the Workstation and in the module(s) for the current level. Any differences are indicated as "Inconsistent." Schedules cannot be modified on this screen, only viewed.

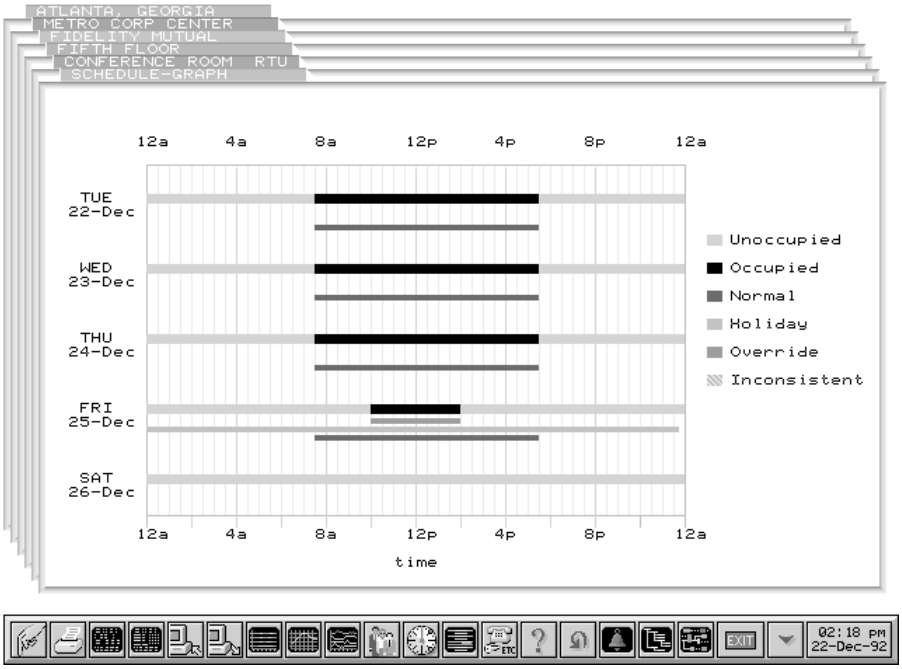


Figure 3-15: The Schedule Graph

The Schedule Graph displays schedules for the level where the **Schedule Graph** command was issued. Schedules which exist at this level for the current day and the following four days are displayed in specific colors corresponding to the type of schedule. These schedules are plotted on a 24-hour chart for easy reference. The Schedule Graph cannot display schedules having a duration of less than five minutes.

Schedules are marked as "Inconsistent" when the schedules in the module(s) are different from the schedules in the Workstation. You can verify which schedules exist only in the Workstation by examining the Schedule Page (see Figure 3-14).

NOTE The **Operator Activity Recorder** (see the section **Setup Page** on page 3-53) can be used to determine details about schedule changes, including who, what, when, old, and new.

Schedule Options (GFBs must be initially programmed by Liebert Site Applications upon request)

Using the Schedule Pop-up

The Schedule pop-up is an interactive menu which provides several ways to enter a schedule. Every schedule must contain certain elements. A time must be defined with an hour and a minute, and a date must be defined with a day, a month, and a year, unless the schedule is non-dated. Selecting **non-dated** means that the schedule is independent from a start date, and end date, or both.

Figure 3-16: Schedule Pop-up

Times and dates exist within scroll boxes. Scroll boxes can be edited several ways:

- By scrolling with the mouse or arrow keys.
- By picking from the pop-up menu boxes.

Placing the cursor

A scroll box can be edited using the mouse and/or the arrow keys. Every item that can be changed in a scroll box assumes an exact position. This position must be selected before it can be changed. To select a position in a scroll box, click once on the item to be changed. If the cursor is not below the correct position, you can move it by clicking elsewhere with the mouse again, or by pressing the left (←) or right (→) arrow keys on the keyboard. Once the cursor is below the correct position in a scroll box, the item can be edited.

To edit by Scrolling

To **increment** the item, scroll it up using one of these methods:

- Press the left mouse button. Hold the mouse button to continue scrolling.
- Press the up (↑) arrow key. Hold the key to continue scrolling *much faster*.

To **decrement** the item, scroll it down using one of these methods:

- Press the right mouse button. Hold the mouse button to continue scrolling.
- Press the down (↓) arrow key. Hold the key to continue scrolling *much faster*.

To edit by Picking from a Menu

Most items on a scroll box can be selected by picking them from a menu. To make the menu appear, double-click on the item to be edited but *do not release* the mouse button. To select a menu item, release the mouse button when the mouse cursor is over the desired item. The new value appears in the scroll box. To abort picking the new menu item, release the mouse button when the mouse cursor is away from the menu.

To Add a Schedule (contact Liebert Site Applications)

1. Determine the most efficient point within SiteScan 2000 for Windows to enter the schedule. Schedules are effective for all the zones which are at or below the level at which the schedule is entered.
2. Select **View**, **Edit**, **Schedules** from the main menu, or pick the **Schedule** button. The Schedule Page will appear.
3. Pick **Add** in the upper right of the Schedule Page. The Schedule pop-up will appear.
4. Select the type of schedule you wish (**Normal**, **Holiday**, **Overide**). **Normal** is the default.
5. Select the time of day (in the **From hh:mm** field) the schedule is to begin. See section **Using the Schedule Pop-up** on page 3-45 for more information.
6. Select the date (in the **From dd-mmm-yy** field) the schedule is to begin.

NOTE Selecting **ND** (no date) in the the **dd-mmm-yy** field causes the date to be replaced with dashes, making the schedule independent from a start date, an end date, or both. It is good practice to enter the starting time and date on all schedules, even if they are to be continuous. This provides a record of when the schedule was entered. If you want a **Continuous** schedule to be undated, it must run from 12:00 a.m. to 12:00 a.m.

---

7. Select the time of day (in the **To hh:mm** field) the schedule is to end.
8. Select the date (in the **To dd-mmm-yy** field) the schedule is to end. See above note.
9. Select the days of the week when the schedule is to be in effect. If the schedule is to run around the clock from the starting time and date to the ending time and date, select **Continuous**. Schedules must be **Continuous** or have at least one day of the week entered.

NOTE Holiday schedules should always be defined as **Continuous** instead of daily, because the latter could possibly allow runtime for periods where the Holiday schedule's starting and ending times do not match the Normal schedule.

---

10. Review the schedule you have just completed. Select **OK** to add the schedule to the list, or select **Cancel** to abort. Once added to the list, a schedule can be modified or deleted as necessary.
11. A schedule will not become effective until it is downloaded into the module(s). When a schedule is downloaded, it will become effective immediately for all the zones which are at or below the level at which the schedule is entered. See section **Downloading Schedules** on page 3-49 for more details.

To Modify a Schedule

NOTE A schedule cannot be modified at a lower level than the level from which it was entered.

---

1. Pick the desired schedule on the Schedule Page.
2. Select **Modify** in the upper right of the screen. The Schedule pop-up appears.
3. Make the desired changes in the appropriate field.
4. Select **OK** to accept the changes or press **Cancel** to abort.

To Delete a Schedule

NOTE A schedule cannot be deleted at a lower level than the level from which it was entered.

---

1. Pick the desired schedule on the Schedule Page.
2. Select **Delete** from the upper right of the screen.
3. A pop-up at the bottom of the screen will ask "Delete this Schedule?" Select **Yes** or **No**, as appropriate.

For an alternate method, also refer to the **schedulepurge** manual command (see the section **Commands** on page 3-1). ***This command should be used with extreme caution.***

Downloading Schedules

Downloading schedules communicates all scheduling information to the appropriate control modules for execution of the specific schedule details.

If you have changed anything on the Schedule Page and attempt to leave it, a pop-up appears and asks if you wish to download schedules. If **Yes** is selected, all the schedules on that page (and all marked schedules) are immediately downloaded to any affected modules. If **No** is selected, schedules are not downloaded at that time, but the Workstation remembers the schedules and "marks" the affected Function Blocks (sets the schedule flag on the Status Page).

This marking feature allows you to add, modify, or delete schedules for many areas without having to download each one individually. To download schedules for "marked" Function Blocks, follow the procedure **To Download Schedules**. **Note that compiling the configuration text will remove any marks.** Use the **mark** manual command to review or change marks for any Function Block in the system.

To Download Schedules

1. Select **Download**, **Schedules** from the main menu, or pick the **Download** button. The Download pop-up will appear.
2. Select between **This FB**, **All FBs**, or **Marked FBs** for schedules. These choices provide flexibility and avoid repetition when entering and downloading schedules.

For an alternate method, also refer to the **dlallmarked** manual command (see the section **Commands** on page 3-1).

Uploading Schedules

SiteScan 2000 for Windows can upload schedules from control modules to a Workstation. This feature allows you to perform schedule changes to the schedules which currently exist in the modules. Uploaded schedules are added to the Workstation's schedule database if they are different from existing ones. Schedules currently in the database are not changed or overwritten.

We advise uploading schedules before making any schedule changes because other operators may change the schedules in the modules from those in your database. Then when you download schedules, you will not inadvertently overwrite someone else's schedules.

To Upload Schedules

1. Select **Upload**, **Schedules** from the main menu, or select the **Upload** button. This command uploads schedules from the current area and all areas or FBs below the current area.

Setpoints

Modifying Setpoints

SiteScan 2000 for Windows allows you to modify zone setpoints on the Environmental Function Block parameter page. The parameter page is where you may change certain Function Block variables such as setpoints, channel numbers, etc. While simple parameters may be toggled On or Off by picking them with the mouse, other parameters when picked display a pop-up menu for entering text or numerical data.

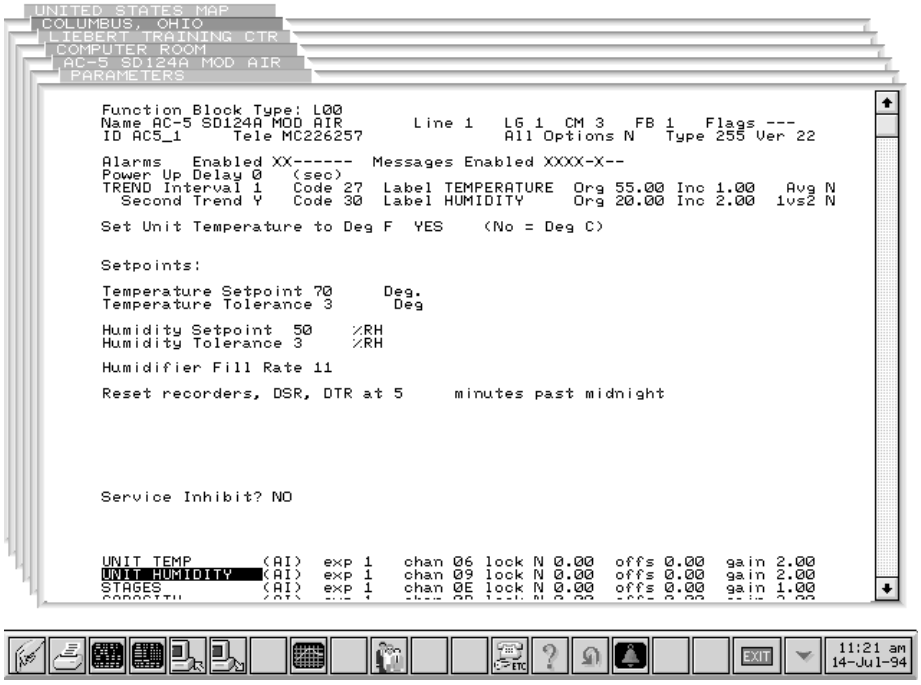

UNITED STATES MAP
COLUMBUS, OHIO
LIEBERT TRAINING CTR
COMPUTER ROOM
AC-5 SD124A MOD AIR
PARAMETERS
Function Block Type: L00
Name AC-5 SD124A MOD AIR Line 1 LG 1 CM 3 FB 1 Flags ---
ID AC5_1 Tele MC226257 All Options N Type 255 Ver 22
Alarms Enabled XX------ Messages Enabled XXXX-X--
Power Up Delay 0 (sec)
TREND Interval 1 Code 27 Label TEMPERATURE Org 55.00 Inc 1.00 Avg N
Second Trend Y Code 30 Label HUMIDITY Org 20.00 Inc 2.00 1vs2 N
Set Unit Temperature to Deg F YES (No = Deg C)
Setpoints:
Temperature Setpoint 70 Deg.
Temperature Tolerance 3 Deg
Humidity Setpoint 50 %RH
Humidity Tolerance 3 %RH
Humidifier Fill Rate 11
Reset recorders, DSR, DTR at 5 minutes past midnight
Service Inhibit? NO
UNIT TEMP (AI) exp 1 chan 06 lock N 0.00 offs 0.00 gain 2.00
UNIT HUMIDITY (AI) exp 1 chan 09 lock N 0.00 offs 0.00 gain 2.00
STAGES (AI) exp 1 chan 0E lock N 0.00 offs 0.00 gain 1.00
EXIT
11:21 am
14-Jul-94

Figure 3-17: The Environmental Parameter Page

In SiteScan 2000 for Windows, the setpoint parameters are established for each Input/Output point. To modify the setpoints, you must change the setpoint parameters for each I/O point by selecting a particular point and entering the new data on the pop-up menu. The setpoints are downloaded once a new screen is selected or by clicking on the parameter screen currently being displayed.

For more information about the Parameter page, see the section **The Parameter Page** on page 5-5.

In SiteScan 2000 for Windows Multiuser, a changeable FB-level screen may be in use by another user when you attempt to display it. For example, another user may be displaying a Parameter page when you try to access the Setpoint Graph for that same Function Block. You will be notified by a "Parameters Lockout Advisory" error if this occurs, and you cannot change any part of that FB until the other user is finished with it. See the section **Navigating the System** on page 2-18 for more information.

Setup Page

Overview

The Setup Page is where SiteScan 2000 for Windows allows you to configure various system-wide features, such as Operator Activity Recording, Time Format, and Color Upload options. To access the Setup Page, select **Utilities, Setup** from the menu, or the **Utilities** button and the **Setup** option. The Setup Page requires a password level of 8 or higher.

In SiteScan 2000 for Windows Multiuser, the Setup Page may be in use by another user when you attempt to display it. You will be notified by a "Setup Lockout Advisory" error if this occurs, and you cannot access the Setup Page until the other user is finished with it. See the section **Navigating the System** on page 2-18 for more information.

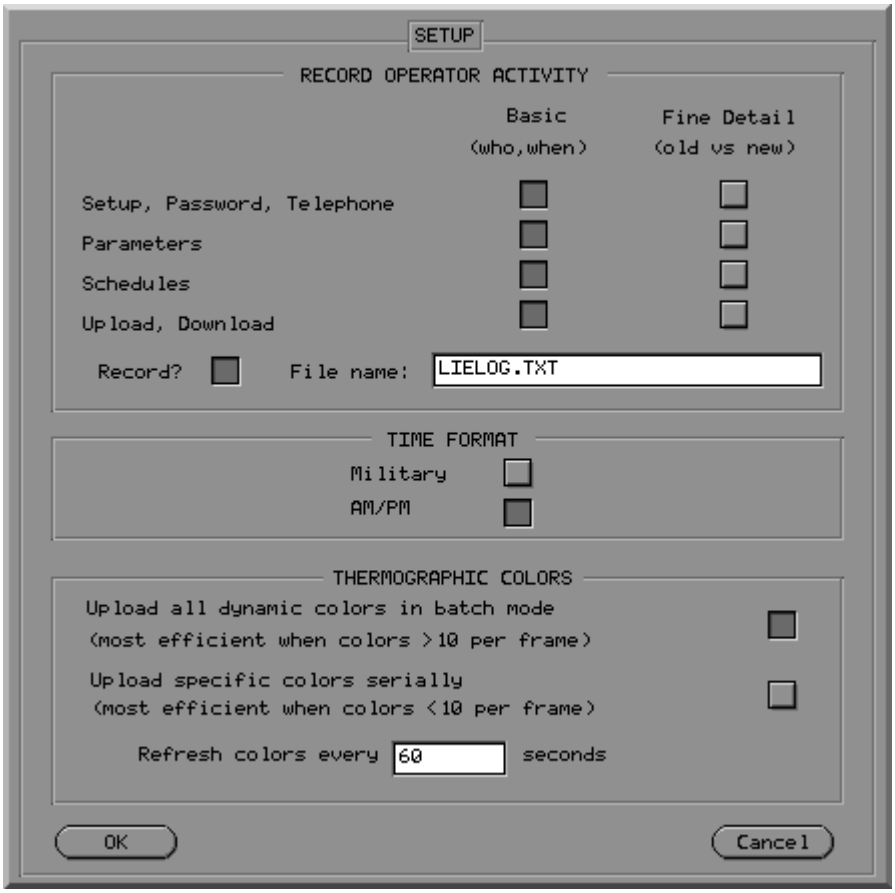


Figure 3-18: The Setup Page

Operator Activity Recorder

This section allows you to determine how the Operator Activity Recorder is set up. When enabled and configured properly, this feature stores all changes made to the system (and who made them) in a Read-Only file.

The **Basic** column specifies which of the various tamperable features of the system are to be recorded. The information stored from this command includes:

- WHICH feature was changed.
- WHO made the change.
- WHEN the change was made.

The **Fine Detail** column yields even more information:

- WHAT value names were changed, including OLD and NEW data.

NOTE The Operater Activity Recorder is not enabled until a **File Name** is entered and the **Record** button is picked.

The file name can be preceded by a number corresponding to a drive mapping. For example, the entry "**4:lielog.txt**" would store the file in the same directory (DRV4) used to store the System database structure (**xxxcnfig.dat**). For more information, see the section **Drive Setup Section** on page 5-29.

CAUTION If the Recorder file is not regularly erased from the hard disk, it will continue to grow until the hard disk is full. This file is a read-only file. To remove the read-only attribute, use the Windows File Manager, Properties command. Then the file can be deleted.

Time Format

This section allows you to select between 2400 hour military time and standard am/pm time notation. Selecting **Military** enables the 2400 hour format. This parameter affects most places in SiteScan 2000 for Windows where time is displayed, such as on the buttons and in Schedules.

Thermographic Colors

This section allows you to change the sequence in which the monitor screens are painted when a building is contacted by SiteScan 2000 for Windows.

NOTE These settings are ignored if the **advancedcolors** option is enabled in the **alc.ini** file. See the section **The SiteScan Tab** on page 5-24 for more information.

Selecting **Batch Mode** means that all the information is gathered before SiteScan 2000 for Windows begins to paint the screen. This mode is most efficient when there are more than 10 and less than 400 colors per frame.

Selecting **Serial Mode** means that SiteScan 2000 for Windows will draw the frame first, then as the information is received from the various units, they are painted in the appropriate color one at a time. This mode is most efficient when there are less than 10 or more than 400 colors per frame.

When Batch Mode is enabled with a large multi-zone network, there is a period of time while the information is gathered from the modules that nothing appears to be happening. When Serial Mode is enabled, the frame is drawn almost immediately, then the zones are sequentially filled in with colors as the information comes in. While Serial Mode actually takes a few seconds longer, it is often preferred to waiting for some time in front of what appears to be a dead screen.

Dynamic Update

The **Refresh Colors** feature allows the variable data that is displayed in SiteScan 2000 for Windows (including the colors in floor plans) to be dynamically updated. This allows you, for example, to witness alarm conditions as they occur. This feature is not active for parameter or status screens. Pressing and releasing both **Shift** keys cancels the dynamic update for a particular frame until the frame is picked again.

The rate of updating can be entered as a value between zero to 255 seconds. A rate of zero disables this feature and means that the latest data may only be obtained by picking the frame's tab manually. Rates less than 60 seconds are not recommended because the network communications can become tied up.

The rate of updating for Live GFBs and New Trends is set independently using the **Rate** button on those screens.

Dynamic updating is suspended if the frame is not visible. For example, if another Windows application partially covers the frame, dynamic updating still occurs. But if the frame is completely covered, or if SiteScan 2000 for Windows is minimized, dynamic updating is suspended.

Trends

Overview

The Trend Graph is where SiteScan 2000 for Windows displays a graph of the trend data for a particular module's I/O points. This screen is accessible from any level in the system hierarchy. Any I/O point in the System can be trended.

New trends are available for most modules which have Exec 4.0 or higher, and which have a module driver version 3.0 or higher, and which have their FBs properly constructed in Eikon 2.0 or later by Liebert Site Applications. Any value can be trended as long as it is attached to an Analog Trend, Digital Trend, Analog Input, Analog Output, Digital Input, or Digital Output microblock when the FB is made in Eikon 2.0 or later.

The Trend Menu Page

The Trend Menu is displayed whenever New trends are requested. This page can be displayed from anywhere in the system hierarchy and it allows you to select the trends you wish to view on the Trend Graph. A tree structure displays (for the current line number to which SiteScan 2000 for Windows is connected) every node's tab label and its address. The current area or FB is positioned at the top of the screen and the enabled trends for that FB are listed, if any exist. Double click on a node to compress or expand the view of that node's subordinate nodes.

Icons on the Trend Menu indicate the following items:

This icon indicates an Area.

This icon indicates a Function Block.

This icon indicates a Trend.

Function blocks having enabled Exec 4.x (or higher) trends are indicated by both the FB icon and the trend icon next to the node tab label. A trend must be enabled on the parameter page for it to appear on this list.

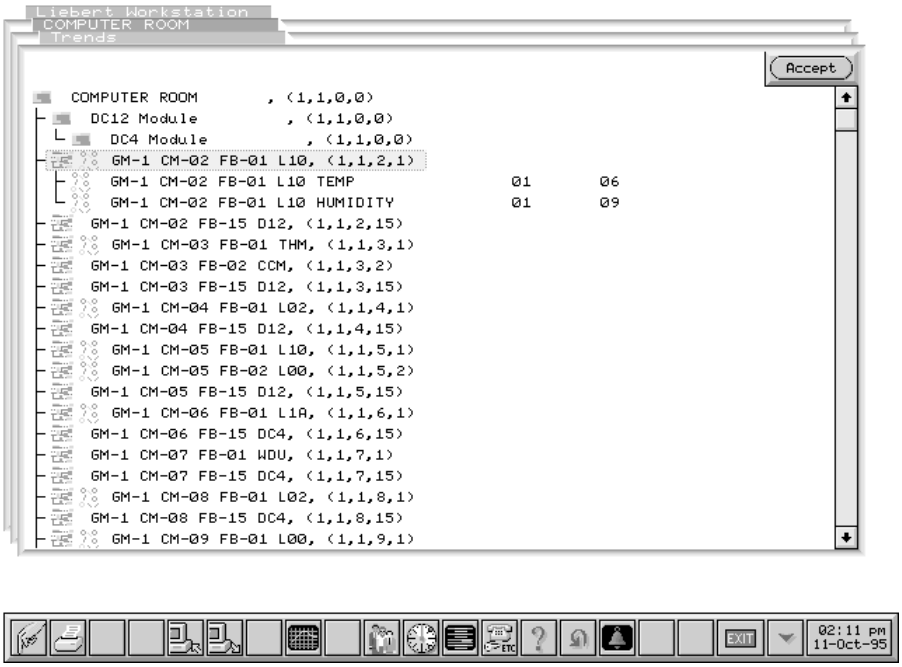

Liebert Workstation
COMPUTER ROOM
Trends
Accept
COMPUTER ROOM , (1,1,0,0)
DC12 Module , (1,1,0,0)
DC4 Module , (1,1,0,0)
GM-1 CM-02 FB-01 L10, (1,1,2,1)
GM-1 CM-02 FB-01 L10 TEMP 01 06
GM-1 CM-02 FB-01 L10 HUMIDITY 01 09
GM-1 CM-02 FB-15 D12, (1,1,2,15)
GM-1 CM-03 FB-01 THM, (1,1,3,1)
GM-1 CM-03 FB-02 CCM, (1,1,3,2)
GM-1 CM-03 FB-15 D12, (1,1,3,15)
GM-1 CM-04 FB-01 L02, (1,1,4,1)
GM-1 CM-04 FB-15 D12, (1,1,4,15)
GM-1 CM-05 FB-01 L10, (1,1,5,1)
GM-1 CM-05 FB-02 L00, (1,1,5,2)
GM-1 CM-05 FB-15 D12, (1,1,5,15)
GM-1 CM-06 FB-01 L1A, (1,1,6,1)
GM-1 CM-06 FB-15 DC4, (1,1,6,15)
GM-1 CM-07 FB-01 WDU, (1,1,7,1)
GM-1 CM-07 FB-15 DC4, (1,1,7,15)
GM-1 CM-08 FB-01 L02, (1,1,8,1)
GM-1 CM-08 FB-15 DC4, (1,1,8,15)
GM-1 CM-09 FB-01 L00, (1,1,9,1)
EXIT
02:11 PM
11-Oct-95

Figure 3-19: The Trend Menu page

Old-style trends do not appear on the Trend Menu. To view trend data for old-style trends, issue the **trends** manual command from the FB level of a module configured to store old-style trends (such as Exec. 3.x modules).

Each trend is displayed with the function block tab label and trend description, followed by two numbers. The first number displays the expander number (for I/O point trends) or the word **Wire** for trends generated by Trend microblocks. The next number displays the channel number (for I/O point trends) or the wire number for Trend microblocks.

To choose a trend for display on the Trend Graph, select it and pick **Accept**. To select multiple trends, use one of the following methods:

- Click on a trend, continue to hold the mouse button, and drag the mouse pointer up or down. Release the mouse when the desired trends are selected.
- Hold the **Ctrl** key while selecting trends that are not adjacent on the list.
- Select a trend then hold the **Shift** key while selecting another trend -- all the trends in between the two selected trends will become selected.

Make sure that all the necessary nodes are expanded before selecting multiple trends. If you expand a node to view its trend list, any previously selected trends become unselected. Press the **Accept** button to view the Trend Graph.

The Trend Graph

When the Trend Graph is initially displayed, SiteScan 2000 for Windows uploads the current trend data from the module(s), with up to 288 data samples for each trend. The screen can display several trends simultaneously using multiple graphs, with up to 4 trends per graph.

- Up to 4 Analog trends which have the same vertical display range are displayed on the same graph, even if each trend was stored at a different trend interval.
- Up to 4 Digital trends are displayed together on a separate graph.

Multiple trends appearing on the same graph are distinguished by color. The FB name and the trend name for each trend is also displayed.

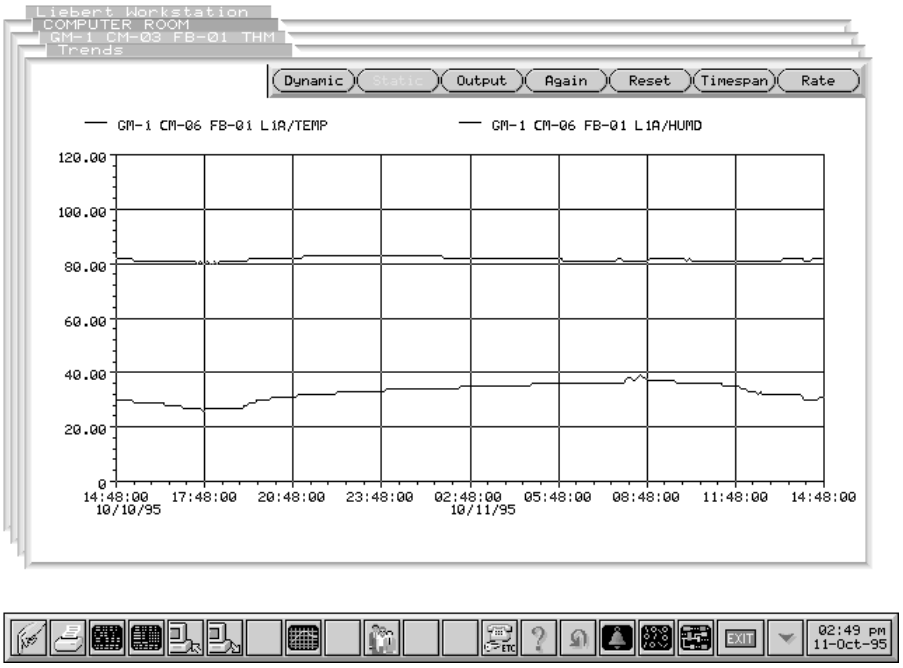


Figure 3-20: The Trend Graph

The Trend Graph plots trend data vs. time. The newest trend data is displayed on the right side of the graph while older data is displayed to the left. The right side of the graph initially represents the present time according to the workstation's clock.

To ensure that comparisons between graphs are accurate, the Trend Graph forces all the graphs to share the same time span (X-axis). Whenever a graph's X-axis changes (because of a zoom or because you changed it using the **Timespan** feature) all the graphs automatically rescale their X-axis to match.

Changing the **Timespan** and pressing the **Reset** button forces the currently uploaded data to fit in the X-axis scale specified on the **Timespan** pop-up. Changing the **Timespan** and pressing the **Again** button causes the Trend Graph to upload the necessary data from the module(s), Trend Historian, or both.

When the Trend Graph is initially displayed, the time span (X-axis) for every graph is scaled to fit 288 samples for the trend having the shortest trend interval of those selected. For this reason, trends having longer trend intervals may not have all 288 samples displayed on the graph, even though they were uploaded from the module. In fact, some trends may not show up at all if they are displayed on the same graph as trends having much shorter intervals.

When displaying a trend, the Trend Graph can only display samples which were stored at the same trend interval. Use the **Timespan** feature to view a period of time where the data samples were stored at a different trend interval.

Small arrows on the left or right sides indicate when trend data has been uploaded but is not being displayed. The arrows do not appear when displaying data from Trend Historian unless the zoom feature is used.

The **left** arrow may occur in these situations:

- When the user has zoomed in on a trend.
- When multiple trends having different intervals are displayed on the same graph.*

The **right** arrow may occur in these situations:

- When the user has zoomed in on a trend.
- When multiple trends having different intervals are displayed on the same graph.*
- When trend data is uploaded from a module whose clock is ahead of the workstation's clock.

* To view the data not displayed in this case, pick the **Timespan** button and change the **last minute**, **hour**, **day**, **week**, or **month** settings to cover the time when these samples were created.

Since the X-axis is scaled to fit the shortest interval of the selected trends, trends with longer intervals may not extend to the right end of the graph. Also, if the **Timespan** feature is used to view older data stored by Trend Historian, the trend may not extend to the left end of the graph when the oldest data samples are displayed.

When the Trend Graph is initially displayed, the screen represents a snapshot of the data stored in the module(s). Pick the **Again** button to view current trend data directly from the module(s). To view the data samples dynamically, pick the **Dynamic** button. The **Rate** button determines how ofter the screen refreshes with live data.

Dynamic updating is suspended if the frame is not visible. For example, if another Windows application partially covers the frame, dynamic updating still occurs. But if the frame is completely covered, or if SiteScan 2000 for Windows is minimized, dynamic updating is suspended.

When using the **Timespan** feature to display **analog** or **floating point** trends from Trend Historian, the graph may drop to negative one. This situation may occur if a data sample is missing or if the trend interval was changed in that particular time frame.

The Trend Graph can display up to 32,000 data samples. If this number is exceeded, the graph displays no trend data. An example of where this may occur is described below.

Say you're trending a point every 5 minutes and receiving trend reports every 24 hours. You would have 288 samples per 24 hours, or 2016 samples in a week, or 8928 samples in a month, or 105,120 samples in a year. In this case, the Trend Graph could display about 3.2 months of data at once (using the **Timespan** feature) before exceeding the limit of 32,000 samples. If necessary, the trend interval can be adjusted so that it would take longer to reach the limit. For example, if you wanted to display about 6 months of trend data at once, capture a trend sample every 10 minutes. In this case, you would only need to receive a trend report about every 2 days using the formula: (288*interval)/60 = hours between reports. For more information, see the section **When Trend Reports are generated** on page 4-8.

The Data Point Feature

To see information about a particular data point, click on the trend. A pop-up appears (see Figure 3-21) which provides the time and date of the point. Analog values can be copied to the Windows clipboard.

Figure 3-21: The Trend Data Point pop-up

The Zoom Feature

To ensure that comparisons between graphs are accurate, the Trend Graph forces all the graphs to share the same time span (X-axis). Whenever a graph's X-axis changes (because of a zoom or because you changed it using the **Timespan** feature) all the graphs automatically rescale their X-axis to match. The Y-axis, however, is rescaled only for the analog graph on which the zoom feature is used. The zoom feature does not rescale the Y-axis on digital trends.

To **zoom** in on a trend, click on a Trend Graph and hold the mouse button while dragging a box. When you release the mouse at the desired place, the X-axis of every graph rescales to fit the width of the box. If the graph contains analog trends, the Y-axis will rescale to fit the height of the box.

Use the **Reset** button to reset the Y-axis to the default values and to reset the X-axis to the scale specified on the **Timespan** pop-up. To change a trend's default vertical scale, change the trend's **display range** parameters on the trend's function block parameter page.

The Trend Graph Buttons

The buttons on the Trend Graph provide a great deal of control over the appearance of the trend data.

- The **Dynamic** button -- Pressing this button causes SiteScan 2000 for Windows to refresh the screen with live data from the module(s). The time between refreshes is set by the **Rate** button.

NOTE Although trend data can be dynamically updated on the screen, it is not stored in Trend Historian until Alert Server receives a trend report. For more information, see the section **Trend Report** on page 4-7.

- The **Rate** button -- Pressing this button allows you to specify how often SiteScan 2000 for Windows uploads trend data from the module(s) for display on the Trend Graph. See the above note. Dynamic updating is suspended if the frame is not visible.
- The **Static** button -- Pressing this button causes SiteScan 2000 for Windows to stop dynamically updating and to hold the current data on the screen.
- The **Output** button -- Pressing this button allows you to output the *displayed* trend data to a printer or to a file either as a graphic or as text. See the section **Trend Graph Output** on page 3-64 for more information.
- The **Again** button -- Pressing this button causes SiteScan 2000 for Windows to upload and display trend data directly from the module(s), Trend Historian, or both. Use the **Timespan** button to specify the age of the data that you wish to view. Depending on the **Timespan** settings, some data samples may come from the module while others come from Trend Historian, but the display is seamless.
- The **Reset** button -- Pressing this button causes the Trend Graph to reset every graph to its original display. The X-axis is reset to the scale specified on the **Timespan** pop-up and the Y-axis is reset to the default values specified on the parameter page.
- The **Timespan** button -- Pressing this button allows you to specify the age of the data that you wish to view. Changing the **Timespan** and pressing the **Reset** button forces the currently uploaded data to fit in the X-axis scale that you specify. Changing the **Timespan** and pressing the **Again** button causes the Trend Graph to upload the necessary data from the module(s), Trend Historian, or both. To view a trend which has data samples which were stored with different trend intervals, you must use the **Timespan** button. Trend Historian must be running for SiteScan 2000 for Windows to access the stored data.

NOTE The **custom** Timespan settings can only be used to access Trend Historian data. Use the **Last minute**, **hour**, **day**, **week**, **month**, or **currently in module** settings to access module data.

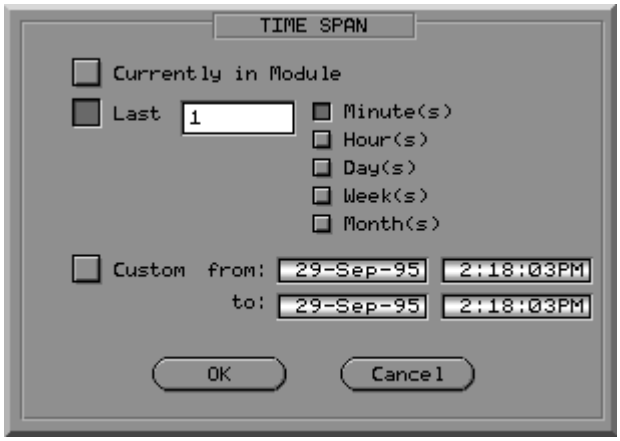


Figure 3-22: The Trend Time Span pop-up

Trend Graph Output

Pressing the **Output** button on the Trend Graph allows you to output the *displayed* trend data to a printer or to a file either as a graphic or as text.

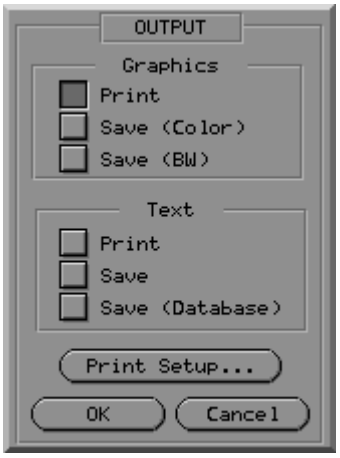


Figure 3-23: The Trend Output pop-up

- The **Graphics-Print** button outputs the displayed data to the printer specified by the **Print Setup** button. The graph indicates data points with different symbols for each trend, and the Y-axis provides twelve major divisions for better accuracy.

Figure 3-24: Sample output from Graphics-Print or Graphics-Save (BW)

- The **Graphics-Save (Color)** button outputs the current frame display as a color Windows metafile (**.WMF**), without the frame borders, tabs, or button bar.
- The **Graphics-Save (BW)** button outputs the displayed data as a black and white Windows metafile (**.WMF**). The output is identical to the output provided by the **Graphics-Print** button.
- The **Text-Print** button outputs the displayed data to the printer specified by the **Print Setup** button. The output is a table of up to 288 data samples per trend.

Trends for RTU-1

Channel = DISCH AIR TEMP00(31) Interval = 5 Minutes

17:33:00	29-AUG-95	55.31	51.88	55.12	55.1255.50	55.5055.81	55.81
18:53:00	29-AUG-95	53.69	55.31	57.75	59.6261.19	62.6263.88	65.19
19:33:00	29-AUG-95	66.44	67.56	68.50	69.6270.38	71.3171.94	72.62
20:13:00	29-AUG-95	73.38	73.88	74.50	74.8175.31	75.7576.06	76.56
20:53:00	29-AUG-95	77.00	77.19	77.19	77.5077.50	77.6977.88	78.31
21:33:00	29-AUG-95	78.50	78.69	78.69	78.6978.69	79.0079.00	79.00
22:13:00	29-AUG-95	79.00	79.12	79.12	79.0079.12	79.1279.00	79.00
22:53:00	29-AUG-95	79.31	79.50	79.31	79.1279.12	79.0079.00	79.00
23:33:00	29-AUG-95	79.00	79.00	79.00	79.0079.00	74.1971.00	66.75
00:13:00	30-AUG-95	66.56	66.88	67.06	67.8868.94	69.9470.88	71.31

Figure 3-25: Sample output from Text-Print or Text-Save (BW)

- The **Text-Save** button outputs the displayed data to the specified file. The output is a table of up to 288 data samples per trend. The output is identical to the output provided by the **Text-Print** button.
- The **Text-Save (Database)** button outputs the displayed data to the specified file. The output is an extensive table of up to 288 data samples per trend, suitable for importing into a database. The information provided for each data sample includes: System, Line, Lan, Module, FB, Expander, Channel (or Wire number, for trends from Trend microblocks), FB Name, Channel Name (or Trend name), Date, Time, Value.

```
"System","Line","Lan","Module","FB","Expander","Channel","FB Name","Channel Name","Date","Time","Value"
"ALC",1,1,2,1,0,"32","RTU-1          ","MIXED AIR TEMP  ","10/2/95","15:33:00", 75.44
"ALC",1,1,2,1,0,"32","RTU-1          ","MIXED AIR TEMP  ","10/2/95","15:38:00", 75.75
"ALC",1,1,2,1,0,"32","RTU-1          ","MIXED AIR TEMP  ","10/2/95","15:43:00", 75.94
"ALC",1,1,2,1,0,"32","RTU-1          ","MIXED AIR TEMP  ","10/2/95","15:48:00", 75.44
"ALC",1,1,2,1,0,"32","RTU-1          ","MIXED AIR TEMP  ","10/2/95","15:53:00", 75.94
"ALC",1,1,2,1,0,"32","RTU-1          ","MIXED AIR TEMP  ","10/2/95","15:58:00", 75.44
"ALC",1,1,2,1,0,"32","RTU-1          ","MIXED AIR TEMP  ","10/2/95","16:03:00", 76.06
"ALC",1,1,2,1,0,"32","RTU-1          ","MIXED AIR TEMP  ","10/2/95","16:08:00", 75.94
"ALC",1,1,2,1,0,"32","RTU-1          ","MIXED AIR TEMP  ","10/2/95","16:13:00", 76.06
"ALC",1,1,2,1,0,"32","RTU-1          ","MIXED AIR TEMP  ","10/2/95","16:18:00", 76.38
"ALC",1,1,2,1,0,"32","RTU-1          ","MIXED AIR TEMP  ","10/2/95","16:23:00", 76.25
"ALC",1,1,2,1,0,"32","RTU-1          ","MIXED AIR TEMP  ","10/2/95","16:28:00", 76.06
"ALC",1,1,2,1,0,"32","RTU-1          ","MIXED AIR TEMP  ","10/2/95","16:33:00", 75.75
"ALC",1,1,2,1,0,"32","RTU-1          ","MIXED AIR TEMP  ","10/2/95","16:38:00", 75.44
"ALC",1,1,2,1,0,"32","RTU-1          ","MIXED AIR TEMP  ","10/2/95","16:43:00", 75.62
"ALC",1,1,2,1,0,"32","RTU-1          ","MIXED AIR TEMP  ","10/2/95","16:48:00", 75.44
```

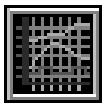
Figure 3-26: Sample output from Text-Save (Database)

The Trend Historian

Trend Historian cannot store New trend data until it receives a Trend Report from Alert Server. For more information, see the section **Trend Report** on page 4-7. New trends are supported only by Exec 4.0 modules (or later) which are downloaded with the corresponding V3.0 (or later) module driver.

Alert Server is able to store trends in Trend Historian only if the **historan.dll** file exists in the same directory as Alert Server or in the path. Trend Historian is enabled by the **Historian** setting (see the section **The Alert Tab** on page 5-31). Trend Historian is not supported by SS2W.

SiteScan 2000 for Windows accesses the Trend Historian when the **Again** button is picked and the **Timespan** is set for older data. An error will occur if Trend Historian is not running or if it can't find the requested data.



Trend Historian's performance can be customized using the Trend Historian application. See the section **Trend Historian** for more information.

To View a Trend Graph

1. Select **View**, **Edit**, **Trends** from the main menu, or select the **Trends** button. A menu will appear with all available trended points for the line number that SiteScan 2000 for Windows is currently connected to. Only points having their **Trend** parameter enabled and a channel number defined (for I/O microblocks) will appear on the list (see the section **The Trend Menu Page**).
2. Choose the trend(s) to be displayed on the Trend Graph. Choose **Accept** to view the Trend Graph.
3. Pick the **Again** button to view current trend data directly from the module. Use the **Dynamic** button to refresh the screen with live data from the module(s). The time between refreshes is determined by the **Rate** button.
4. Use the **Timespan** and **Again** buttons to view trend data stored in the Trend Historian database.

5. The graphic display can be printed to paper or to a file by picking **Output**. For a print of the entire screen, pick the **Print** button and the **Graphics** option.
    - To print a trend's data in a table format directly from the module, select **Utilities**, **Print**, **Trends** or pick the **Print** button and the **Trends** option.

Using New Trends

NOTE This procedure can be performed only on an Exec 4.0 (or later) module which is downloaded with the corresponding V3.0 (or later) module driver.

1. Select **Utilities**, **Manual** from the main menu, or select the **Manual Command** button, or press the **Esc** key. Display the module driver Parameter page (FB #15) by entering the following command: **pa ,,(module no.),15**
2. Set the parameter "**This module should display old-style FB trends**" to "**No**". This causes every FB in the module to display New trends on the Trend Graph rather than Standard trends.
3. Display the Parameter page of the FB for which you want to enable New trends.
4. Set "**All Options**" to "**Yes**".
5. All the parameters associated with New trends are displayed beneath each I/O point and trended value. Use these parameters to enable or disable the trend, set the trend interval and display range, and enable or disable the trend for Trend Reports (required by Trend Historian).

NOTE Changing the **interval** causes the module to discard all previous trend data, although Trend Historian may still have the data stored in its database.

The **trend** parameter enables the trend. The **interval** can be set to a minimum of one second or a maximum of 255 minutes (an interval of 5 min. x 288 samples = 24 hrs.). You can change the interval units from seconds to minutes by toggling the **secs** parameter.

NOTE If you change the trend **interval** parameter, you should also ensure that the frequency at which the Trend alarm is tripped remains at least 20% faster than the shortest trend duration (duration = trend interval x 288). For more information, see the section **Trend Report** on page 4-7.

The **report** parameter enables the trend for Trend Reports (see the section **Trend Report** on page 4-7) which are required by Trend Historian. The **display range** parameters (displayed for analog trends only) determine the minimum and maximum of the trend's *vertical*

scale. Since there are twelve major divisions on the Trend Graph Y-axis, the display range must be divisible by 12 for the Y-axis scale to be displayed in integers on the Trend Graph. The trend name is displayed in the same color as the trend.

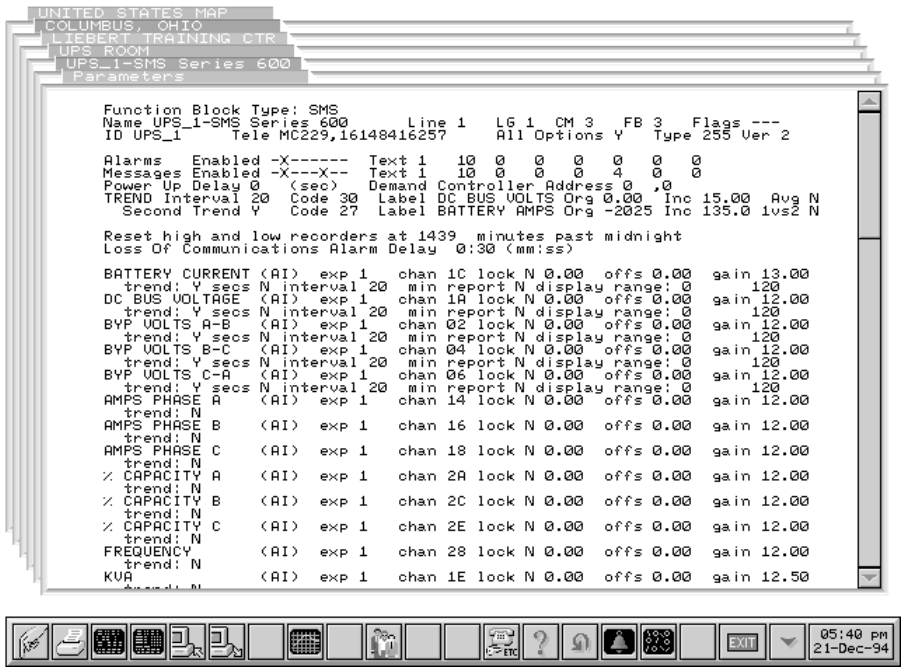

UNITED STATES MAP
COLUMBUS, OHIO
LIEBERT TRAINING CTR
UPS ROOM
UPS_1-SMS Series 600
Parameters
Function Block Type: SMS
Name UPS_1-SMS Series 600 Line 1 LG 1 CM 3 FB 3 Flags ---
ID UPS_1 Tele MC229,16148416257 All Options Y Type 255 Ver 2
Alarms Enabled -X------ Text 1 10 0 0 0 0 0 0
Messages Enabled -X---X-- Text 1 10 0 0 0 4 0 0
Power Up Delay 0 (sec) Demand Controller Address 0 ,0
TREND Interval 20 Code 30 Label DC BUS VOLTS Org 0.00 Inc 15.00 Avg N
Second Trend Y Code 27 Label BATTERY AMPS Org -2025 Inc 135.0 1vs2 N
Reset high and low recorders at 1439 minutes past midnight
Loss Of Communications Alarm Delay 0:30 (mm:ss)
BATTERY CURRENT (AI) exp 1 chan 1C lock N 0.00 offs 0.00 gain 13.00
trend: Y secs N interval 20 min report N display range: 0 120
DC BUS VOLTAGE (AI) exp 1 chan 1A lock N 0.00 offs 0.00 gain 12.00
trend: Y secs N interval 20 min report N display range: 0 120
BYP VOLTS A-B (AI) exp 1 chan 02 lock N 0.00 offs 0.00 gain 12.00
trend: Y secs N interval 20 min report N display range: 0 120
BYP VOLTS B-C (AI) exp 1 chan 04 lock N 0.00 offs 0.00 gain 12.00
trend: Y secs N interval 20 min report N display range: 0 120
BYP VOLTS C-A (AI) exp 1 chan 06 lock N 0.00 offs 0.00 gain 12.00
trend: Y secs N interval 20 min report N display range: 0 120
AMPS PHASE A (AI) exp 1 chan 14 lock N 0.00 offs 0.00 gain 12.00
trend: N
AMPS PHASE B (AI) exp 1 chan 16 lock N 0.00 offs 0.00 gain 12.00
trend: N
AMPS PHASE C (AI) exp 1 chan 18 lock N 0.00 offs 0.00 gain 12.00
trend: N
% CAPACITY A (AI) exp 1 chan 2A lock N 0.00 offs 0.00 gain 12.00
trend: N
% CAPACITY B (AI) exp 1 chan 2C lock N 0.00 offs 0.00 gain 12.00
trend: N
% CAPACITY C (AI) exp 1 chan 2E lock N 0.00 offs 0.00 gain 12.00
trend: N
FREQUENCY (AI) exp 1 chan 28 lock N 0.00 offs 0.00 gain 12.00
trend: N
KVA (AI) exp 1 chan 1E lock N 0.00 offs 0.00 gain 12.50
EXIT
05:40 pm
21-Dec-94

Figure 3-27: Sample Parameter page showing New trends enabled (inverted for display reasons)

Memory Allocation for New Trends

Module memory is consumed by virtual modules, module drivers, Function Blocks, Digital trends, and Analog trends. Exec 4.x modules may trend up to 50 points per module (real or virtual), although a module may not be able to trend all 50 points depending on how its available memory is used. The number of trends in Exec 5.x modules is limited only by the amount of free memory.

Not all trends use the same amount of memory. Analog trends use more memory than digital trends. Non-linear analog trends (thermistors) use twice as much memory as linear analog trends (4-20 mA sensors).

When a trend is enabled on the parameter page (and the change is downloaded to the module), a portion of the module's memory is allocated for that trend. In Exec 4.x modules, the memory allocated for a trend cannot change size after it is initially allocated without clearing the module's memory by "zapping" the module. Exec 5.x modules dynamically allocate memory, so zapping the module to reallocate

memory is unnecessary. Exec 5.x modules also store trends in non-volatile memory, so the data is not lost when the module is powered down or zapped.

NOTE Zapping or powering down an Exec 3.x or Exec 4.x module causes any stored trend data to be lost, and causes any equipment controlled by the module to shutdown and restart.

In Exec 4.x modules, unless the module is zapped or powered down, trend memory can only be freed and reallocated by the same type of trend. For example, a digital trend cannot be replaced by an analog trend, and an analog trend cannot be replaced by a digital trend (even though the digital trend is smaller). A non-linear analog trend must be replaced by a non-linear analog trend, etc. However, unless the module's memory is full, memory allocation is transparent to the operator and should not be an issue.

New Trends and Virtual Modules

The concept of virtual modules was developed in order to expand the number of Function Blocks that may exist in Exec 4.x modules. Exec 5.x modules do not use virtual modules. Virtual modules are essentially used for storing FBs. In this method, several copies of the module driver are downloaded into a physical (real) module so that each one can address up to 14 FBs. A second method is to download one copy of the real module driver and several copies of UVM (Universal Virtual Module driver). The UVM driver is smaller than a real module driver, thus conserving module memory for the storage of Function Blocks. The real module driver must be UVM-aware for the second method to apply. Note that the allowable number of virtual modules and Function Blocks varies according to the amount of module memory.

The use of virtual modules in Exec 4.x modules reduces the memory available for New trends, but it does not affect Standard trends, which are stored by Exec 4.x and Exec 3.x modules in a different memory location.

To check how many virtual modules are defined in a particular Exec 4.x module, look on the real module driver (FB #15) parameter page. The total number of available virtual modules is the quantity of numbers next to the "**Virtual Module Addresses**" parameter. Any zeros, or undefined virtual module addresses, indicates free memory banks available for storing New trends.

If all of the virtual module address parameters are defined (i.e., all

memory banks are being used), then the module will store New trends in unused memory in each bank.

Standard Trends

A portion of each module's memory is permanently set aside for Standard trends, and does not conflict with the memory used for virtual modules and New trends. Standard trends can be used simultaneously with New trends, but only one type can be displayed at a time on the Trend Graph (see the section **Using Standard Trends** on page 3-72).

Standard trends can store up to 60 samples for a single point or 30 samples each for two points. When the 61st data sample is read and stored, the first is lost. If two points are being trended, the 31st data sample for both points will cause the first to be lost for both points. This may be thought of as one 60-sample or two 30-sample sliding windows.

Using Standard Trends

1. Select **Utilities**, **Manual** from the main menu, or select the **Manual Command** button, or press the **Esc** key. Display the module driver Parameter page (FB #15) by entering the following command: **pa ,,(module no.),15**
2. Set the parameter "**This module should display old-style FB trends**" to "**Yes**". This causes every FB in the module to display Standard trends on the Trend Graph rather than New trends.
3. Display the Parameter page of the FB for which you want to enable Standard trends.
4. Set "**All Options**" to "**Yes**".
5. All the parameters associated with Standard trends are displayed in the header portion of the FB Parameter page. Use these parameters to configure up to two trends for the FB.

The trend is identified by the **Trend Code** parameter. Trend codes must be set to 255 or lower. Contact Liebert Site Applications for a specific trend code.

The **Interval** parameter allows a minimum of one minute or a maximum of 255 minutes (an interval of 24 min. x 60 samples = 24 hrs.). If the interval is greater than one minute, you may elect to average the data. If the **Average** parameter is enabled, a data sample is read each minute and is added to the sum of the samples read since the last average was recorded. When the interval has elapsed, the total is divided by the interval and that result is recorded.

NOTE Changing the **interval**, **average**, or **trend code** parameters causes the module to discard all previous trend data.

The way the Standard trend graph appears is determined on the FB parameter page by four parameters. **Origin** is the value of the Y-axis at the X-axis and Y-axis intersection. **Increment** is the value of each of the 30 Y-axis divisions. The **1vs2** parameter allows two analog points to be trended against each other, with "Trend 1" plotted on the X-axis and "Trend 2" plotted on the Y-axis. Digital points may not be plotted in 1vs2 mode. The **trend name** identifies the trend on the graph. The **trend name** and the Y-axis scale are displayed in the same color as the trend.

To View a Standard trend graph

1. At the FB level, select **View**, **Edit**, **Trends** from the main menu, or select the **Trends** button. The Standard trend graph will appear, displaying the Standard trends which have been configured for the FB (see the section **Using Standard Trends**).
2. The Standard trend graph can be updated by picking the **Again** button in the upper right corner.

3. The graphic display can be printed by selecting **Utilities**, **Print**, **Graphics** from the main menu, or pick the **Print** button and the **Graphics** option.
    - To print the trend data in a table format, select **Utilities**, **Print**, **Trends** or pick the **Print** button and the **Trends** option.

* * *

4 Alarms and Reports

Alert EL

Alert EL is the basic alarm receipt software program which must be installed separately from SiteScan 2000 for Windows. Alert EL uses Alert Server which gathers the alarm and trend information and then distributes it to Alert EL and/or Trend Historian. Alert Server is included in Alert EL and it has no user interface. Alert Server is launched automatically when Alert EL is running and configured as a receiving station. Since Alert Server must be running in order to receive alarms, you may want to place Alert EL in the Windows Startup Group for automatic loading. Refer to the *Alert EL User's Guide* for more information. For more comprehensive alarm management, we recommend that you purchase and install the full-featured Alert software.

CAUTION Do not close Alert EL unless you do not want to receive alarms. Alert Server can only monitor the port connections when it is running.

When a **gateway module** contacts (or is contacted by) the Workstation, Alert Server determines whether the gateway module has anything to report to that particular computer. If so, Alert Server accepts the data and clears the gateway module.

NOTE One gateway module should not be set up to call two different receiving stations because if this occurs, the alarm information will be duplicated in the Alert database.

The Systems which Alert Server monitors is defined by the **List** and **File** settings in the **INI Configuration Manager** (see the section **The Alert Tab** on page 5-31 for more information). Alert Server will not accept alarms from systems which are not defined by this setting.

Also, the **Check When Connected** settings provide the ability to control whether SiteScan 2000 for Windows checks for alarms on behalf of Alert Server when it makes contact with a System (see the section **The SiteScan Tab** on page 5-24). Alert Server can receive alarms and reports using only a Direct connction, a Modem connction, or a Netbios connection. A Direct Network connection cannot be used to receive alarms or to get colors. Workstation modems can receive alarms at different baud rates.

NOTE DCLANs store alarms generated from Alert microblocks on consoles 1-4 only. SiteGate-ETH stores alarms in eight Global Buffers.

Alert EL uses the same Connection Configuration software provided with SiteScan 2000 for Windows to store hardware port access information. This means that you should be careful about making changes to the Connection Configuration Page from within Alert EL. Changing certain parameters on this screen could prevent SiteScan 2000 for Windows from finding a device, causing SiteScan 2000 for Windows to display an error when you attempt to connect to an installation. For more information, see the section **Connection Configuration** on page 3-17.

NOTE Alert EL is compatible only with SiteScan 2000 for Windows V2.5 or higher.

Alarms

Alarms are defined as conditions of a critical nature which are monitored by Function Blocks. Exec 4.x Function Blocks can use both Alarm microblocks and Alert microblocks to report alarms, whereas Exec 5.x FBs can use only Alert microblocks. These microblocks are placed in the Function Block when the FB is made in Eikon by Liebert Site Applications. Alert microblocks provide more features than do old-style alarms. For more information about Alert microblocks, refer to the *Alert EL User's Guide*.

NOTE Alert microblocks are supported only by Exec 4.0 modules (or later) which are downloaded with the corresponding V4.1 (or later) module driver.

Using Old-style Alarms

NOTE Modules containing Exec 5.x and higher do not support the Alarm and Message microblocks (old-style alarms).

Alarm microblocks (old-style alarms) allow an FB to monitor up to eight different alarm conditions specific to that FB's operation. Message microblocks function identically to Alarm microblocks, except that they are primarily used to monitor up to eight different conditions of a non-critical nature.

Gateway modules consider old-style alarms and messages to be "critical alarms" and handle them the same as alarms from Alert microblocks marked as critical.

The following restrictions apply to using old-style alarms and messages:

- Alarm and message microblocks are limited to eight different alarms and eight different messages per FB.
- Old-style alarms and messages are time-stamped with the time that the alarm is received by Alert EL, not the time the alarm was generated.

- Old-style alarms and messages cannot return to normal. Therefore, an old-style alarm will remain in the Active state in Alert EL until all its requirements (if any) are fulfilled and it is closed.
- Old-style alarms and messages cannot transmit latched data or time input overrides from the FB.
- Old-style alarms and messages cannot be designated as "non-critical" and are treated as "critical" by default.
- Alarm and Message microblocks are not supported by modules containing Exec 5.x or later firmware.

To configure a Function Block having old-style alarms so that an alarm condition will be reported to the Workstation, bring up the FB's parameter page. At the top of the page is displayed **Alarms enabled**, followed by eight dashes representing the eight alarm flags. To the right is displayed **Text**, followed by eight numbers. The leftmost dash corresponds to the leftmost number, the second dash corresponds to the second number, and so on. The following alarm or message positions are reserved:

Table 4-1: Reserved alarm and message positions

Type	Bit (counting from left to right)	Reserved for
alarm	1	"Points under manual lock"
message	1	"Runtime expired"
message	6	"FB error"
message	7	"Daily trend report"
message	8	"Daily status report"

To enable an alarm, change the appropriate dash to an "**X**" and enter a corresponding text number for that flag. (The initial alarm flag settings are configured when the FB is made in Eikon by Liebert Site Applications.) When the prescribed condition for that alarm exists, the FB notifies the **gateway module** which alarm is active and which text number to store. The gateway module then contacts Alert Server at the Workstation.

Each alarm text number is used to create the Alarm ID which is displayed in Alert EL. For example, an alarm generated from an Alarm microblock using the alarm text number 18 would be received in Alert EL as "A18." Similarly, a message generated from a Message

microblock using the message text number 23 would be received in Alert EL as "M23." See Table 4-2 for reserved Alarm IDs.

When configuring old-style alarms, avoid using Alarm IDs which have special meaning (see the table below). For example, avoid using "A241" through "A255" because these Alarm IDs are generated by Exec 4.x modules to represent module-level alarms. In later versions of Exec, these module-level Alarm IDs are changeable on the module driver parameter page.

Table 4-2: Reserved Alarm IDs

A241	A246	A251
A242	A247	A252
A243	A248	A253
A244	A249	A254
A245	A250	A255

Locks

Locks are conditions where devices are forced to a locked position from an FB Parameter page. Since each FB may have more than one point which can be locked, the lock is reported simply as "Devices are under manual lock." To enable this feature for FBs in Exec 3 or Exec 4 modules, replace the first dash in the **Alarms Enabled** parameter with an "**X**". (In Exec 5.x or later modules, locks are enabled on the module driver.) Locks have a default Alarm ID of **A1**.

Status Report

The Status Report is a feature which automatically generates a snapshot of a Function Block's Status page. Status Reports are especially useful for those Function Blocks which record historical data. By collecting these status reports every day, you can develop a useful record for detecting deteriorating equipment, billing information, etc. The Status Report is stored in the module's memory and can be activated using either an Alert microblock or a Message microblock.

To activate the Status Report using an Alert microblock, the microblock must have an Alarm ID of **STATUS** and the alarm must be enabled. To enable the alarm, toggle the **Enable** parameter on the FB's Parameter

page. If these conditions are met, then the FB will generate a Status Report whenever the alarm is tripped. An Alert alarm with an Alarm ID of **STATUS** is always treated by the gateway module as a critical alarm.

To activate the Status Report without using an Alert microblock, you must enable **message bit 8** with an "**X**". The message bits are located in the Header portion at the top of the FB's Parameter page (see the section **Using Old-style Alarms** on page 4-3). The Function Block must contain an old-style Message microblock which will generate a Status Report whenever the microblock is tripped (pre-Eikon FBs are discussed below). Old-style alarm and messages are always treated by the gateway module as critical alarms.

When the FB is constructed in Eikon by Liebert Site Applications the Alert or Message microblock can be tripped as often as desired. (For an example of the logic required to trip the alarm, see Figure 4-3.)

Pre-Eikon Function Blocks send the Status Report to the gateway module as soon after 1:00 a.m. as possible in order to take advantage of lowest telephone rates and the lowest traffic expectancy. Pre-Eikon FBs which store historical information (i.e., outside air, electric meter) take the snapshot of the Status page at midnight. Pre-Eikon FBs which do not store historical information take the snapshot at the time the alarm is delivered to the gateway module.

```
DAILY STATUS   6-Apr-95 6:49pm Alarm ID:STATUS Line Address: 1,1,2,1
Liebert BuildingLiebert Corp.                        ELECTRIC METER
Status Report is as follows:
Function Block Type: EMP (ELECTRIC METER PROGRAM)
Name ELECTRIC METER           Line 1   GCM 1  CM 2   FB 1   Flags --
ID ELECMETR  Tele 9524517             All Options Y   Type 11  Ver 3

ACTIVE ALARMS    -------X  ACTIVE MESSAGES -------- STATUS-CODE 0
CURRENT DEM LEV 0

 CURRENT DEMAND 469   kW
```

METER HISTORY	Usage	Peak time date
Today	3000 kWH	704 kW (01:09 6-Apr-93)
Month-to-date	100. MWH	815 kW (03:33 2-Apr-93)
Year-to-date	1200 MWH	944 kW (02:57 16-Feb-93)

Figure 4-1: A sample Status Report

Trend Report

The Trend Report is a feature which automatically generates a New Trend Report (288 samples per trend) or a Standard Trend Report (60 samples per FB), depending on on a setting in the module driver. The Trend Report is stored in the module's memory and can be activated using an Alert microblock.

To activate the Trend Report using an Alert microblock, the microblock must have an Alarm ID of **TREND** and the alarm must be enabled. To enable the alarm, toggle the **Enable** parameter on the FB's Parameter page. If these conditions are met, then the FB will generate a Trend Report whenever the alarm is tripped. An Alert alarm with an Alarm ID of **TREND** is always treated by the gateway module as a critical alarm.

When the FB is constructed in Eikon by Liebert Site Applications the Alert microblock can be tripped as often as desired. (For an example of the logic required to trip the alarm, see Figure 4-3.)

Depending on a setting on the module driver Parameter page, the Trend

Reports may contain data either (1) for all the Standard trends in the module, or (2) for all New trends in the module (refer to the appropriate procedure below for details). Each FB in the module sends the same type of report.

NOTE Alert Server sends New trend data to Alert EL and to Trend Historian, each of which may store the data in its own database. Storing the same trend data through Alert EL and through Trend Historian can cause disk space to be consumed very rapidly. Refer to the *Alert EL User's Guide* for more information.

```
TRENDS    6-Apr-95 6:50pm Alarm ID:TREND   Line Address:  1, 1, 3, 5
Metro Corp Center    Fifth Floor           Conference Room
Trend Report is as follows:
ZONE TEMP    Channel = 31    Interval = 10 Non-averaged

4:52pm 6-Apr-93  77.50  77.50  77.25  77.00  77.50  77.50
5:04pm 6-Apr-93  77.50  77.50  77.50  77.50  77.75  77.00
5:16pm 6-Apr-93  77.00  77.25  77.50  77.50  77.50  77.50
5:28pm 6-Apr-93  77.50  77.50  77.75  77.75  76.50  76.25
5:40pm 6-Apr-93  76.50  76.50  84.25  77.75  75.75  75.50
5:52pm 6-Apr-93  76.25  76.50  76.50  78.25  76.00  75.75
6:04pm 6-Apr-93  75.75  76.25  76.25  76.50  76.75  76.75
6:16pm 6-Apr-93  76.75  76.75  76.75  76.75  76.75  77.00
6:28pm 6-Apr-93  76.75  76.75  77.00  77.25  77.25  77.00
6:40pm 6-Apr-93  77.00  77.25  77.25  77.25  77.25  77.25
```

Figure 4-2: A sample Trend Report

When Trend Reports are generated

How often an FB sends a Trend Report to the workstation depends on how often the trend alarm is tripped. It can be tripped as often as desired when the FB is constructed in Eikon by Liebert Site Applications.

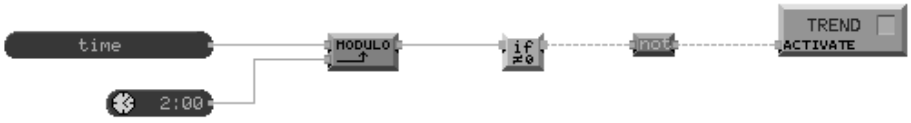


Figure 4-3: Sample logic included in an FB to generate a Trend Report

The sample logic in the above figure trips the trend alarm when the user-defined duration is evenly divisible into the module's current time.

This sample sends a Trend Report every two hours. The parameter text for this logic is defined in the Time Parameter microblock, as shown in Figure 4-4.

Figure 4-4: Time Parameter microblock with the proper parameter text for the logic shown in Figure 4-3.

It is important to remember that Trend Historian may contain gaps in the recorded data if the trend alarm is not tripped often enough. Please note the information and the example listed below:

- **interval** = Amount of time between samples
- **duration** = Total time that it takes from the time the first sample is collected to the time that the last sample is collected. This is the total amount of time that it takes to collect 288 samples of data (interval x 288 = duration).

When Trend Historian is not used, the Trend Report can be sent once a day at a user-defined time depending on your needs.

Minute Trends (where interval ≥ 1 min.)

Say that you want to set up a trend on an AI with an interval of 5 minutes. This means that it will take you 24 hours (5 minutes x 288 samples = 24 hours) to receive one full trend graph worth of data. After 24 hours, the samples begin to overwrite themselves. If you want to capture the data to Trend Historian before the data begins to be overwritten, then allow the trend alarm to be tripped at least five minutes before the duration is about to expire. This ensures that Alert Server has ample time to pick up the data without losing any of the data. In this example, you would allow the trend alarm to trip at least every 23 hours and 55 minutes (23:55).

It can take Alert Server between 3 and 5 minutes to receive the data and deliver it to Alert EL and Trend Historian. In the above example, if the trend alarm was tripped at exactly 24 hours, then Alert Server would not finish processing the data before the data samples were overwritten. These overwritten points would show up as gaps to Trend Historian. With multiple sites that are modem connected, it could take up to 2 hours for Alert Server to receive trend information from all of the sites.

In this example, you would want to trip the trend alarm approximately 2 hours before the trend duration is about to expire (22:00).

Second Trends (where interval < 1 min.)

Using trends with short intervals increases the risk of losing data because the trend alarm may not be set often enough. For example, say that you want to set up a trend on an AI with an interval of 5 seconds. This interval would require a duration of 24 minutes to receive 288 samples of data (5 seconds x 288 samples = 24 minutes). It would take Alert Server approximately 3 minutes to process the information. During this 3 minutes, 36 new samples of data have been taken. To make sure that none of this information is lost, trip the trend alarm every 20 minutes or so (more often if you are using multiple sites that are modem connected - see previous paragraph). This may prevent gaps in the recorded data.

NOTE If you are using Trend Historian and change the trend **interval** parameter, you should also ensure that the frequency at which the trend alarm is tripped remains within the above guidelines.

Standard Trends

An older FB which was not constructed in Eikon (and which has **message bit 7** enabled) generates a Trend Report for each trend as soon after 1:00 a.m. as possible in order to take advantage of the lowest telephone rates and the lowest traffic expectancy. This Trend Report is a snapshot of the trend's last 60 samples before the report was sent. Note that pre-Eikon FBs can use only Standard Trends (which are not supported by Trend Historian).

To generate Trend Reports for New trends or Standard trends

Contact Liebert Site Applications or your local sales representative for this option.

NOTE The number of trends which can be enabled depends on the use of module memory. See the section **Memory Allocation for New Trends** on page 3-70 for more information.

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* * *

5 Advanced Topics

System Architecture

Small Systems

The Liebert architecture is designed so that it can support both large and small networks. Small networks (those using less than 50 monitoring/ control modules) require only a single Gateway Module (SiteGate-232) which serves the entire Control Module Network, or CMnet. Note that only one SiteGate-232 may exist per CMnet.

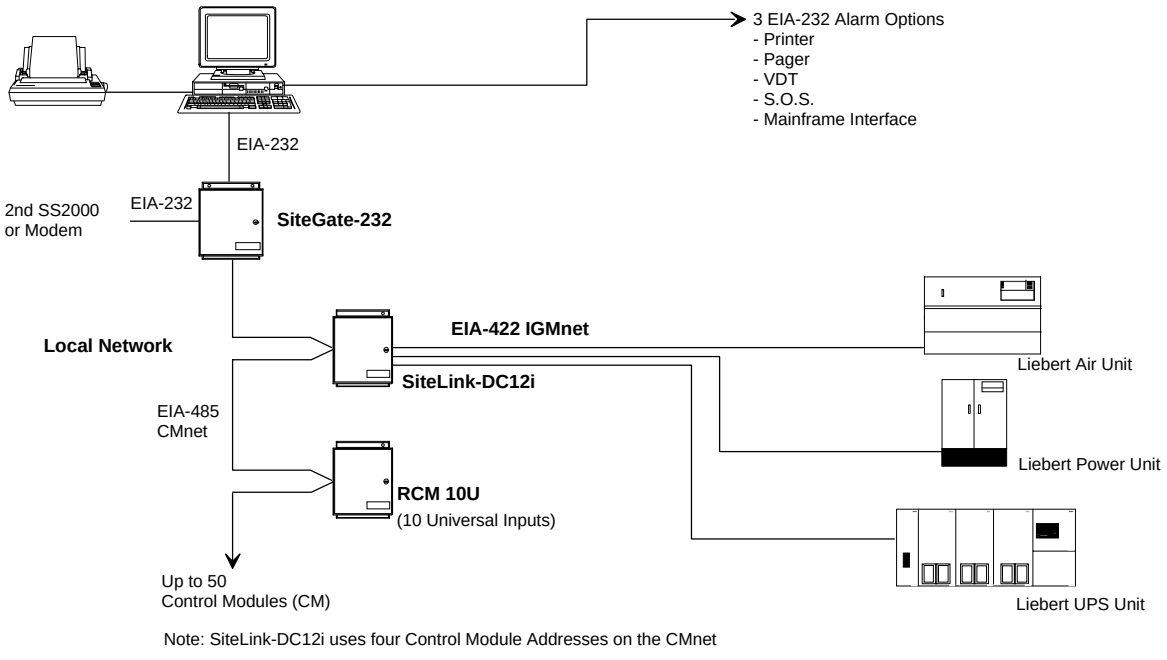


Figure 5-1: System Architecture (Small System)

The SiteGate-232 communicates with the Workstation using a EIA-232 serial communications port. Using this port, the SiteGate-232 may communicate with the Workstation or a portable field computer through either a modem or through a direct EIA-232 connection.

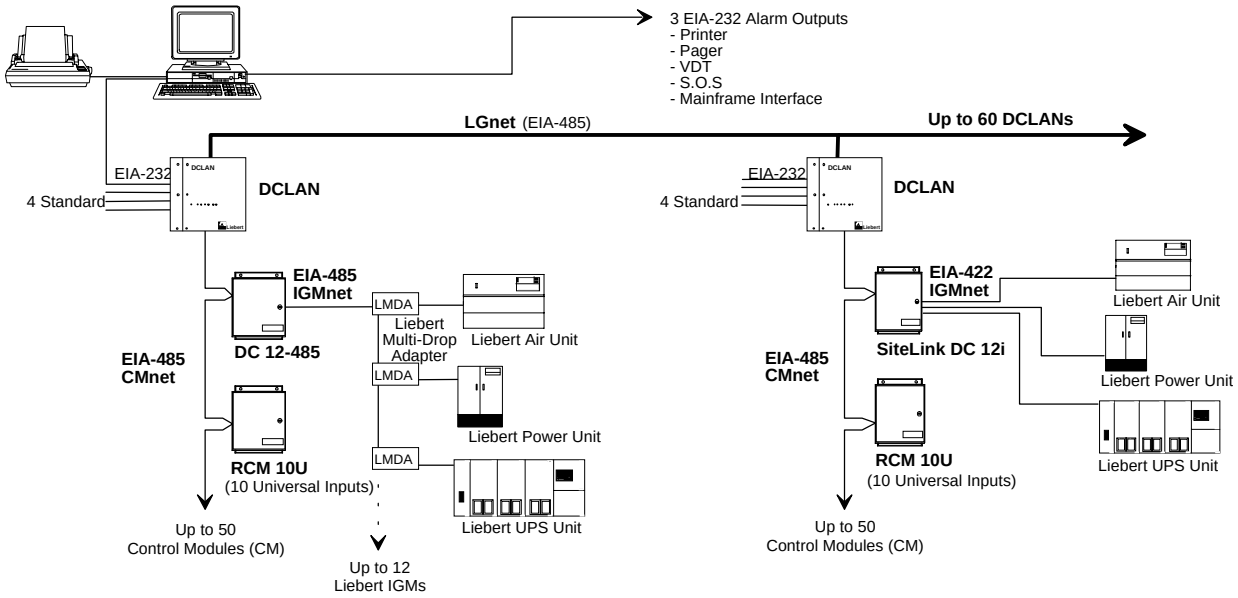
The SiteGate-232 communicates with the CMnet through a EIA-485 port. This CMnet is a peer-to-peer local area network (LAN) which uses a "token-passing" protocol to allow up to 50 control modules to communicate with one another with equal authority. Each control module is capable of stand-alone monitoring and/or control, thus increasing system reliability and performance.

Large Systems

While small systems utilize a single CMnet for implementing system-wide control strategies, large systems can support multiple CMnets using the same distributed technology for maximum flexibility. The backbone of the large system architecture is the LGnet, a peer-to-peer global network which allows all nodes to communicate with one another with equal authority.

Nodes on the LGnet can be either DCLANs or SiteGate-ETHs. Each module supports a CMnet on which may reside any combination of control modules. Each DCLAN is a communications gateway between the LGnet, CMnet, and any Workstations that may be connected to it. The flexible architecture of the DCLAN allows the LGnet to be configured as EIA-485 (38.4 Kbps), Ethernet (10 Mbps), or Token Ring (16Mbps), all of which can be implemented using fiber optic cable, coax, or twisted pairs. This arrangement allows for maximum flexibility while maintaining compatibility with existing networks. The SiteGate-ETH is specifically designed to connect over Ethernet.

Each CMnet supports up to 50 controllers (zone controllers, rooftop controllers, or stacks). However, multiple gateways can be added to the LGnet for projects that require more than 50 control modules. A total of 60 gateways can be added to the LGnet, each supporting up to 50 control modules. The configuration of the network is unrestricted and the modular design of the hardware allows the capacity of the system to be expanded at any time without disruption of the existing installation.



Note: DC12 uses four Control Module Addresses on the CMnet

Figure 5-2: System Architecture (Large System)

Function Blocks

Overview

The fundamental strategy for specific equipment operation resides in Function Blocks (FBs), which are software elements housed in a control module directly connected to a piece of equipment. Each module may also utilize data from other modules for the optimization of its strategies and the proper sequencing of related equipment. This distribution of information places fundamental authority at the most local point of control and maximizes the use of system-wide information.

The performance reliability of this type of control network is very high due to two distinct characteristics:

- **Modularity**: Each major piece of equipment usually has its own control module. This eliminates the risk found in larger multiple-point panels where panel failure disables many pieces of equipment.
- **Stand-alone Capability**: Each module is capable of functioning without dependency on other modules on the network or on the Workstation. This minimizes the impact of failure by any one module.

Function Blocks are created by Liebert Site Application engineers using a software application called Eikon. Because Eikon provides graphical programming abilities, the FBs constructed in it are sometimes referred to as Graphic Function Blocks (GFBs). The Function Block files are stored in the custom M68 directory (see the section **Workstation Directories** on page 5-41) for each System. Portions of each FB file are downloaded to the module they are associated with. This association is established by the System's configuration text file.

A Function Block consists of a **Parameter** page and a **Status** page. It may also have associated with it a **Live GFB** and a **graphic** file. In order to display a Live GFB, certain conditions must be met as discussed in the section **Live GFBs** on page 3-29. If a graphic file does not exist for a Function Block that you attempt to display, the Status page is displayed instead. When an FB is displayed from one of these places, you are considered to be at the Function Block level, which is the most basic level of control.

Each Function Block has a color associated with it which is set according to the conditions established by the person who created the FB. Each color has a Status Code associated with it which is displayed on the FB's Status page. For more information, see the section **The Status Page** on page 5-9.

Each module contains a special Function Block called the module driver. These FBs are configured when the job is installed and should not be changed by the user.

Multi-User Support

One of the features of SiteScan 2000 for Windows Multiuser is preventing multiple operators from changing the same Function Block or other part of the program at the same time. When this occurs you are notified by a pop-up which indicates that it is being used by someone else. This could happen when you attempt one of the following actions:

- Display an FB Parameter page, Live GFB, or Point Help page.
- Perform a Global Modify.
- Modify schedules.
- Modify a setpoint on the Setpoint Graph.
- Change the members of a Group.
- Update configuration text.
- Display the Connections page, Passwords page, or Setup page.

The Parameter Page

The Parameter page is where the FB stores its configuration settings for the various blocks of program code (called microblocks) which make up the Function Block. Many users have set a standard policy to always upload parameters before making any changes (to automate this function, see the **Always Upload Parameters** command in the section **The SiteScan Tab** on page 5-24). Any changes which have been made to the Parameter page are automatically downloaded immediately when you leave the page.

The Parameter page may be displayed with any level password, but how it may be changed depends on the user's password level. As the password level increases, so does the number of parameters that can be changed. Those parameters appearing in **blue** may be changed by the user. Parameters appearing in **yellow** are password protected and may not be changed by the user. The password level for each microblock is established when the FB is made in Eikon by Liebert Site Applications.

Note that parameters can also be changed from other parts of SiteScan 2000 for Windows, such as the Setpoint Graph, Live GFB, Global Modify, and Point Help pages. Parameters cannot be changed while Alert Server is gathering alarms through SiteScan 2000 for Windows.

SHIFT +

To view the parameters which are in the module, hold **Shift** and pick the **Parameters** button, or hold **Shift** and pick the parameters tab. This causes SiteScan 2000 for Windows to temporarily upload the parameters in the module and display them on the Parameter page. Note that this action does not overwrite the parameters in the SiteScan 2000 for Windows database. Perform an **Upload**, **Parameters** for this purpose.

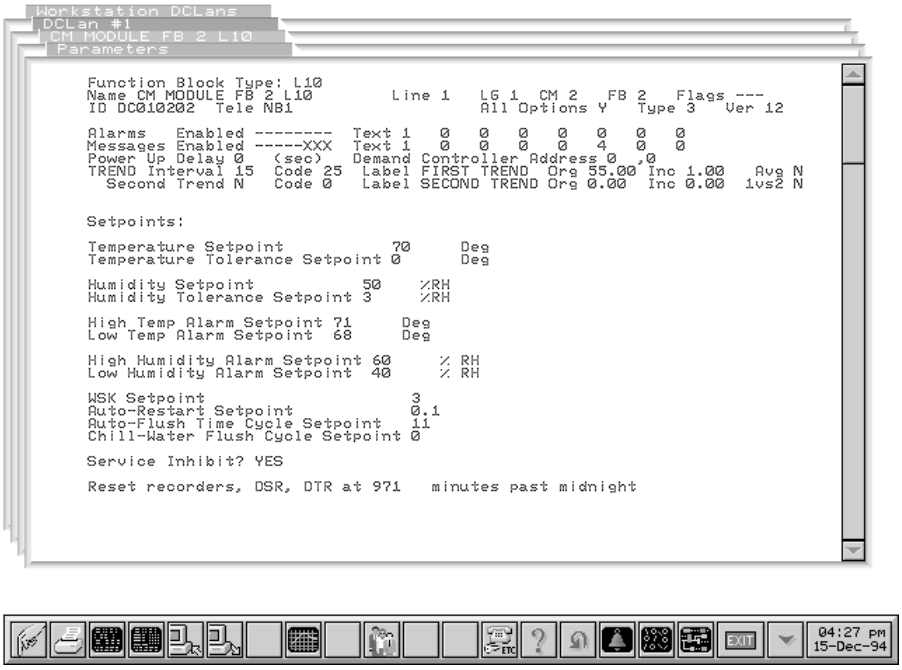

Workstation DCLans
DCLan #1
CM MODULE FB 2 L10
Parameters
Function Block Type: L10
Name CM MODULE FB 2 L10 Line 1 LG 1 CM 2 FB 2 Flags ---
ID DC010202 Tele NB1 All Options Y Type 3 Ver 12
Alarms Enabled -------- Text 1 0 0 0 0 0 0 0
Messages Enabled -----XXX Text 1 0 0 0 0 4 0 0
Power Up Delay 0 (sec) Demand Controller Address 0 ,0
TREND Interval 15 Code 25 Label FIRST TREND Org 55.00 Inc 1.00 Avg N
Second Trend N Code 0 Label SECOND TREND Org 0.00 Inc 0.00 ivs2 N
Setpoints:
Temperature Setpoint 70 Deg
Temperature Tolerance Setpoint 0 Deg
Humidity Setpoint 50 %RH
Humidity Tolerance Setpoint 3 %RH
High Temp Alarm Setpoint 71 Deg
Low Temp Alarm Setpoint 68 Deg
High Humidity Alarm Setpoint 60 % RH
Low Humidity Alarm Setpoint 40 % RH
WSK Setpoint 3
Auto-Restart Setpoint 0.1
Auto-Flush Time Cycle Setpoint 11
Chill-Water Flush Cycle Setpoint 0
Service Inhibit? YES
Reset recorders, DSR, DTR at 971 minutes past midnight
EXIT
04:27 PM
15-Dec-94

Figure 5-3: Typical Parameter Page

The Alt-Pick Feature

Every parameter within an FB has a unique code, which is displayed on a pop-up when a non-digital parameter is picked on the parameter page, or when any parameter or status value is picked while holding the **Alt** key. The code for the last parameter or status value that was picked while the **Alt** key was pressed is automatically displayed on the Global Modify page.

The Header Section

Every Function Block contains a section at the top called the **Header** which contains basic information. The Parameter page Header contains the following information:

Function Block Type -- This is the FB's three-character filename which is entered in the configuration text.

Name -- This is the name entered for the tab label in the configuration text. Up to 20 characters may be used, including spaces and special characters, to display the name most commonly understood by the owner in referring to the space or equipment.

ID -- This is an identification of up to eight characters (the first of which must be an alphabetic character) assigned in the configuration text to each FB. Every FB in a System has a unique ID.

Tele -- This indicates the telephone number for the FB's gateway module, as defined on the Connections Page.

Line, GCM, CM, FB -- This is the address of the FB from the configuration text. It stands for telephone line number, gateway module number, control module number, and Function Block number.

Flags -- This identifies three flags which indicate the FB is "marked" because of certain conditions. If all flags display dashes then the FB is not marked. A "**P**" flag indicates that there has been a change to the FB's Parameter page which has not been downloaded to the module. An "**S**" flag indicates that there has been a change to the FB's schedules which has not been downloaded to the module. An "**M**" indicates that memory download has failed for this Function Block. Dashes ("-") indicate that the FB is not marked with a flag.

All Options -- This is the only changeable parameter in the Header portion of the FB and toggles between **Y** and **N**. When it is set to **Y**, all parameters become visible even if they have not been defined (you may have to redraw the screen by picking a tab to see them). When it is set it to **N**, only those parameters which have been defined are visible.

Type -- This parameter indicates how often the Function Block has been made in Eikon (requires Eikon V2.1 or greater and SiteScan 2000 for Windows V1.1 or greater). Older versions of Eikon set this parameter to 255. If this parameter does not match the corresponding parameter in the module, all parameters are displayed in **yellow** and cannot be changed. Also, parameters cannot be uploaded or downloaded. Function Blocks having a mismatched type do not have their parameters written to configuration text when the configuration text is updated. To correct this problem, download memory to the module. This parameter is checked when the FB is first displayed and after a successful memory download. This parameter is unrelated to the **Version** microblock in Eikon.

Ver -- This parameter indicates how many times the FB's parameters have been changed. If the FB file in the computer does not match the FB which is downloaded into the module, the **Ver** parameter and the parameters which do not match are displayed in **purple**. To correct this problem, either upload or download parameters. This parameter is unrelated to the **Version** microblock in Eikon.

Alarms Enabled or **Messages Enabled** -- This parameter is only displayed for Exec 3.x and Exec 4.x FBs. It has spaces for eight different alarm and message conditions for each FB. These spaces correspond to the alarm and message texts which are listed to their right. An "**X**" in one of the eight positions indicates that that alarm or message bit is enabled, while a dash indicates that it is disabled. More sophisiticated alarm features are available by using Alert microblocks.

Power Up Delay -- This parameter indicates how long the FB will wait upon power restoration before turning on any of its devices. It is important that the power up delay vary for different Function Blocks so that when power is restored to the module, there will be an orderly sequence of equipment starts.

Demand Controller Address -- This parameter is a two-part address which indicates the module number (left #) and the FB number (right #) of the Electric Meter FB which serves a particular piece of equipment.

Trend -- The parameters listed to the right of this parameter are used for configuring the FB's Standard trends. For more information, see the section **Standard Trends** on page 3-72.

Second Trend -- Same as above.

Update Time -- This parameter is used to help determine when the FB broadcasts its color, prime variable, and heating or cooling requests. This parameter is visible only when **All Options** is enabled.

Command From -- This parameter contains up to four two-part addresses from which a non-graphic Exec 3 FB will respond to commands.

Listen to req sent to -- This parameter is a two-part address which indicates a module number (left #) and an FB number (right #). The FB will listen and respond to requests sent to the indicated address, as well as requests and commands sent to its own address.

Virtual module addresses -- This parameter appears only on module drivers and identifies the addresses of "modules", or banks of module memory which are used to expand the number of Function Blocks in a physical module. These addresses do not have to be contiguous, but they must be unique for each System.

The Status Page

The Status page is where Function Block displays the current status (as it exists in the module) of the various blocks of program code (called microblocks) which make up the Function Block. The Status page may be accessed with any level password, but it may not be changed by any level password. All parameters which are changeable on the Parameter page show up on the Status page in **yellow**.

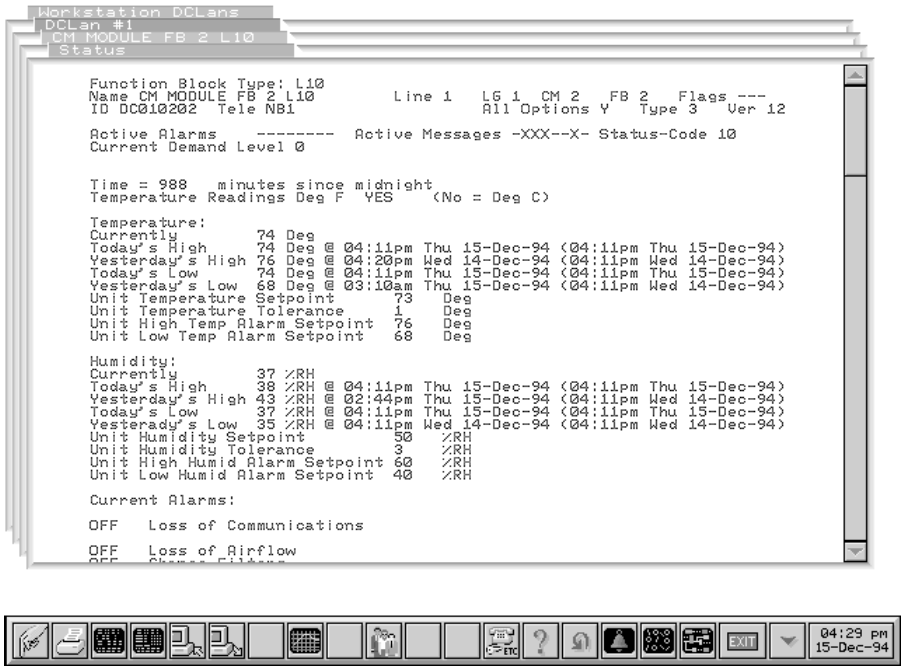

Workstation DCLans
DCLan #1
CM MODULE FB 2 L10
Status
Function Block Type: L10
Name CM MODULE FB 2 L10 Line 1 LG 1 CM 2 FB 2 Flags ---
ID DC010202 Tele NB1 All Options Y Type 3 Ver 12
Active Alarms -------- Active Messages -XXX--X- Status-Code 10
Current Demand Level 0
Time = 988 minutes since midnight
Temperature Readings Deg F YES (No = Deg C)
Temperature:
Currently 74 Deg
Today's High 74 Deg @ 04:11pm Thu 15-Dec-94 (04:11pm Thu 15-Dec-94)
Yesterday's High 76 Deg @ 04:20pm Wed 14-Dec-94 (04:11pm Wed 14-Dec-94)
Today's Low 74 Deg @ 04:11pm Thu 15-Dec-94 (04:11pm Thu 15-Dec-94)
Yesterday's Low 68 Deg @ 03:10am Thu 15-Dec-94 (04:11pm Wed 14-Dec-94)
Unit Temperature Setpoint 73 Deg
Unit Temperature Tolerance 1 Deg
Unit High Temp Alarm Setpoint 76 Deg
Unit Low Temp Alarm Setpoint 68 Deg
Humidity:
Currently 37 %RH
Today's High 38 %RH @ 04:11pm Thu 15-Dec-94 (04:11pm Thu 15-Dec-94)
Yesterday's High 43 %RH @ 02:44pm Thu 15-Dec-94 (04:11pm Wed 14-Dec-94)
Today's Low 37 %RH @ 04:11pm Thu 15-Dec-94 (04:11pm Thu 15-Dec-94)
Yesterady's Low 35 %RH @ 04:11pm Wed 14-Dec-94 (04:11pm Wed 14-Dec-94)
Unit Humidity Setpoint 50 %RH
Unit Humidity Tolerance 3 %RH
Unit High Humid Alarm Setpoint 60 %RH
Unit Low Humid Alarm Setpoint 40 %RH
Current Alarms:
OFF Loss of Communications
OFF Loss of Airflow
EXIT
04:29 PM
15-Dec-94

Figure 5-4: Typical Status Page

The Header Section

Every Function Block contains a section at the top called the **Header** which contains basic information. The Status page Header contains the same information as the Parameter page Header with the following exceptions:

Active Alarms or **Active Messages** -- This item is only displayed for Exec 3.x and Exec 4.x FBs. This item has dashes corresponding to the eight different alarm or message conditions for the FB. An "**X**" indicates the particular alarm or message is active, while a dash indicates it is not active. Before an alarm or message can become active, it must be enabled on the Parameter page. Function Blocks having active alarms or messages report them to the gateway module, which in turn contacts the Workstation. More sophisiticated alarm features are available by using Alert microblocks.

Status Code -- This number indicates the status, or color, of the Function Block. Colors are used to communicate the following conditions:

Table 5-1: Status Codes

Status Code	Color	Condition
0	Purple	Hardware communication error
1	Gray	Unoccupied/Inactive
2	Red	Alarm
3	Dark Blue	Not Used
4	Light Blue	Not Used
5	Green	Not Used
6	Speckled Green	Not Used
7	Yellow	Not Used
8	Orange	Not Used
9	Red	Alarm
10	White	Occupied/Active
11	Not used	Not used
12	Not used	Not used
13	Coral	FB error
14	Charcoal	Module stopped (due to incomplete schedule or parameter download)
15	Purple	Software communication error
None	Mustard	Configuration error

Marking

Overview

Marking is a method used by SiteScan 2000 for Windows to remember which Function Blocks need information downloaded to them. Every FB has three flags which indicate the type of information that needs to be downloaded:

P -- This flag indicates that **Parameters** need to be downloaded. This flag is automatically set when a change is made to the FB's parameter page which has not been downloaded to the module.

S -- This flag indicates that **Schedules** need to be downloaded. This flag is automatically set when a change is made to the FB's schedules which has not been downloaded to the module.

M -- This flag indicates that **Memory** needs to be downloaded. A memory download includes all FB files, parameters, and schedules. This flag is automatically set when a memory download has failed for the module.

The Mark feature allows you to quickly mark or unmark multiple Function Blocks which reside in different modules. This feature makes System-wide marking and downloading an easy, two-step process.

NOTE Compiling the configuration text removes any marks.

The Mark Page

The Mark page appears when the **mark** manual command has been issued or when it is selected from the Utilities menu. It is available at any time, regardless of whether SiteScan 2000 for Windows is currently connected with a System. The Mark page displays a list of the areas and FBs which exist in the system hierarchy at the current level and below. For example, if the mark command is issued at the system level, then all the FBs for the current line number are listed. But if the mark command is issued at an area level, then only the FBs which exist in that area are listed.

The Mark page displays a tree structure with each FB's tab label, FB type, address, and flags. If an FB is not marked for a Memory, Parameter, or Schedule download, then the flag position is replaced by

a dash. Only the selected FBs and areas are affected by the buttons in the mark and unmark areas.

Icons on the Mark page indicate the following items:

This icon indicates an Area.

This icon indicates a Function Block.

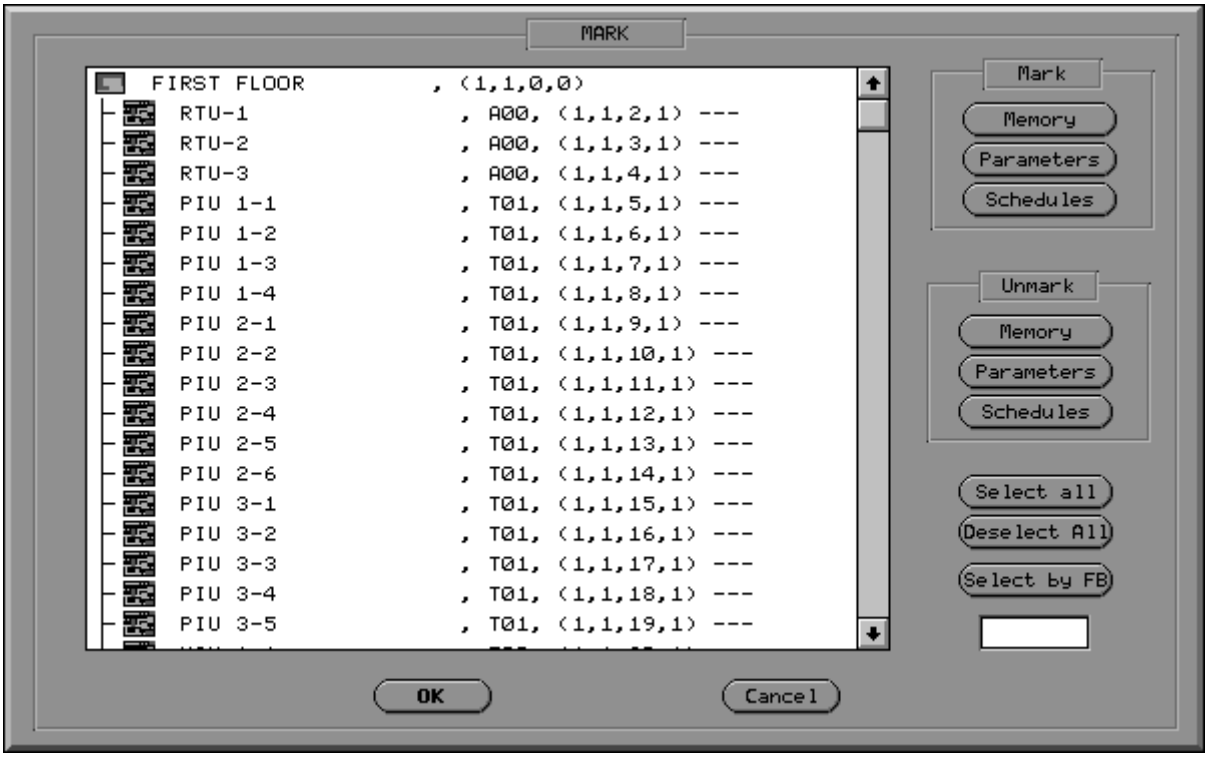


Figure 5-5: The Mark page

To Mark or Unmark one or more FBs

To mark or unmark an FB, select it and pick the desired button in the mark or unmark areas of the page. To select multiple FBs, use one of the following methods:

- Click on an Area. All the FBs in that area and below will be affected by the mark or unmark option that you pick.
- Click on an FB, continue to hold the mouse button, and drag the mouse pointer up or down. Release the mouse when the desired FBs are selected.

- Hold the **Ctrl** key while selecting FBs that are not adjacent on the list.
- Select an FB then hold the **Shift** key while selecting another FB -- all the FBs in between the two selected FBs will become selected.
- Type the desired FB name in the lower right box and press the **Select by FB** button. All the FBs with that name in the currently connected line number will become selected.

For information on downloading, see the section **Downloading Schedules** on page 3-49.

Point Help

Overview

Point Help is a feature which allows you to more easily define the parameters for Input and Output points on control modules. When launched, it displays a list of all the points in the Function Block, along with certain information about each point. Point Help allows you to configure each point according to the kind of input or output device it is wired to by picking from possible selections. It also allows you to easily calibrate a point without having to perform difficult calculations. Point Help supports all modules having Exec 3.0 (or later).

NOTE Point Help is available only if the **pointhlp.dll** file exists in the SiteScan 2000 for Windows working directory or in the path.

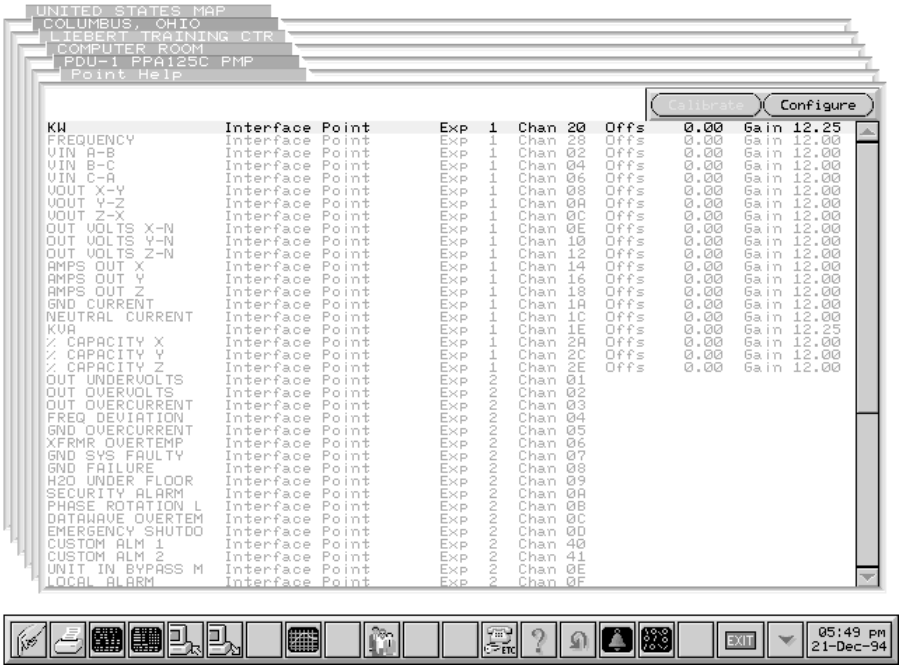

UNITED STATES MAP
COLUMBUS, OHIO
LIEBERT TRAINING CTR
COMPUTER ROOM
PDU-1 PPA125C PMP
Point Help
Calibrate
Configure
KW Interface Point Exp 1 Chan 20 Offs 0.00 Gain 12.25
FREQUENCY Interface Point Exp 1 Chan 28 Offs 0.00 Gain 12.00
VIN A-B Interface Point Exp 1 Chan 02 Offs 0.00 Gain 12.00
VIN B-C Interface Point Exp 1 Chan 04 Offs 0.00 Gain 12.00
VIN C-A Interface Point Exp 1 Chan 06 Offs 0.00 Gain 12.00
VOUT X-Y Interface Point Exp 1 Chan 08 Offs 0.00 Gain 12.00
VOUT Y-Z Interface Point Exp 1 Chan 0A Offs 0.00 Gain 12.00
VOUT Z-X Interface Point Exp 1 Chan 0C Offs 0.00 Gain 12.00
OUT VOLTS X-N Interface Point Exp 1 Chan 0E Offs 0.00 Gain 12.00
OUT VOLTS Y-N Interface Point Exp 1 Chan 10 Offs 0.00 Gain 12.00
OUT VOLTS Z-N Interface Point Exp 1 Chan 12 Offs 0.00 Gain 12.00
AMPS OUT X Interface Point Exp 1 Chan 14 Offs 0.00 Gain 12.00
AMPS OUT Y Interface Point Exp 1 Chan 16 Offs 0.00 Gain 12.00
AMPS OUT Z Interface Point Exp 1 Chan 18 Offs 0.00 Gain 12.00
GND CURRENT Interface Point Exp 1 Chan 1A Offs 0.00 Gain 12.00
NEUTRAL CURRENT Interface Point Exp 1 Chan 1C Offs 0.00 Gain 12.00
KVA Interface Point Exp 1 Chan 1E Offs 0.00 Gain 12.25
% CAPACITY X Interface Point Exp 1 Chan 2A Offs 0.00 Gain 12.00
% CAPACITY Y Interface Point Exp 1 Chan 2C Offs 0.00 Gain 12.00
% CAPACITY Z Interface Point Exp 1 Chan 2E Offs 0.00 Gain 12.00
OUT UNDERVOLTS Interface Point Exp 2 Chan 01
OUT OVERVOLTS Interface Point Exp 2 Chan 02
OUT OVERCURRENT Interface Point Exp 2 Chan 03
FREQ DEVIATION Interface Point Exp 2 Chan 04
GND OVERCURRENT Interface Point Exp 2 Chan 05
XFRMR OVERTEMP Interface Point Exp 2 Chan 06
GND SYS FAULTY Interface Point Exp 2 Chan 07
GND FAILURE Interface Point Exp 2 Chan 08
H2O UNDER FLOOR Interface Point Exp 2 Chan 09
SECURITY ALARM Interface Point Exp 2 Chan 0A
PHASE ROTATION L Interface Point Exp 2 Chan 0B
DATAWAVE OVERTEM Interface Point Exp 2 Chan 0C
EMERGENCY SHUTDO Interface Point Exp 2 Chan 0D
CUSTOM ALM 1 Interface Point Exp 2 Chan 40
CUSTOM ALM 2 Interface Point Exp 2 Chan 41
UNIT IN BYPASS M Interface Point Exp 2 Chan 0E
LOCAL ALARM Interface Point Exp 2 Chan 0F
EXIT
05:49 pm
21-Dec-94

Figure 5-6: The Point Help page

Point Help Buttons

The Point Help page includes several buttons which are defined below.

NOTE The **Calibrate** and **Configure** buttons are disabled if your password level is not equal to or greater than the highest password level of any parameter within the point selected.

- The **Calibrate** button -- Pressing this button allows you to adjust the offset parameter for the selected analog point by a whole number. For example, if a sensor reading is higher than the actual temperature by two degrees, you may enter a "2" and press the **Decrease** button. Using this feature is easier than having to calculate a new offset.

Figure 5-7: The Calibrate pop-up

- The **Configure** button -- Pressing this button allows you to select the type of signal that the selected point will handle. Because the module type determines which types of signals are possible, Point Help displays only the signal types which are acceptable to the module which contains the point. After a signal type is selected, Point Help allows you to configure the point based on all of the possible selections for that module and signal type (see section **Using Point Help** on page 5-16 for more information).

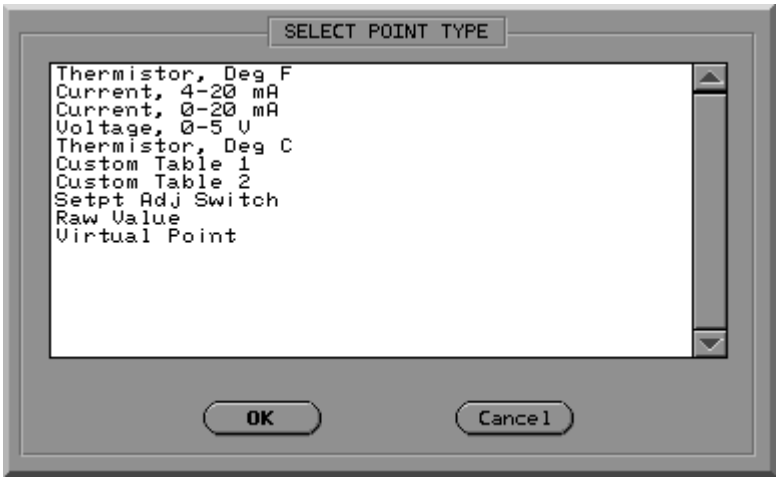


Figure 5-8: The Select Point Type pop-up

Using Point Help

Point Help can be used as an effective tool when setting up parameters for I/O points. However, note that once the points are configured, their parameters may not need to be changed unless a different type of device is installed. Point Help can be accessed from the FB level by pressing the **Point Help** button or by issuing the **pointhelp** manual command.

In SiteScan 2000 for Windows Multiuser, a changeable FB-level screen may be in use by another user when you attempt to display it. For example, another user may be displaying a Parameter page when you try to access the Point Help page for that same Function Block. You will be notified by a "Parameters Lockout Advisory" error if this occurs, and you cannot change any part of that FB until the other user is finished with it. See the section **Navigating the System** on page 2-18 for more information.

Note that Point Help does not cross-check channel numbers or other parameter settings for FBs in the same module. For example, it cannot prevent you from defining a Universal Input as an AI in one FB and as a DI in another FB in the same module. Point Help also does not read jumper and switch settings from the module. Therefore, when changing the signal type for an input point, be sure to verify that the module's input jumper is set properly.

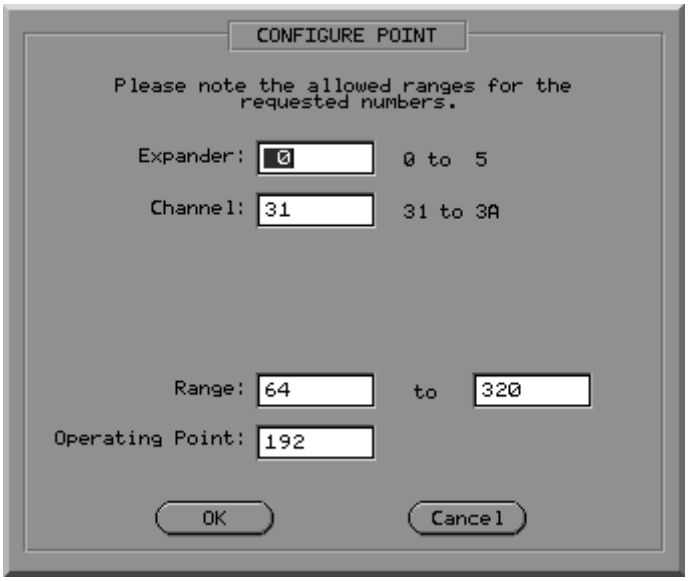


Figure 5-9: Typical Point Configuration pop-up

The **Range** field allows you to enter the range of the device. The **Operating Point** field allows you to specify the device's expected mid-range operating value, which is usually the most accurate point within that range. Point Help then calculates the correct **offset** and **gain** for that point. Use the **Calibrate** button on the Point Help Page to easily modify the offset parameter to match the device readings.

To configure a point

1. Display the Parameter page of the FB to be configured.
2. Pick the **Point Help** button, or press the **Esc** key and issue the **pointhelp** manual command. The Point Help page will appear.
3. Select the point to be changed.
4. Pick the **Configure** button. A pop-up will appear, displaying only the signal types which are compatible for the module which contains the point.
5. Select the type of signal which is wired to the point and press **OK** to continue or **Cancel** to abort.
6. On the pop-up which appears next (see Figure 5-9), define the parameter configuration which is appropriate for the point. A status line provides helpful information to aid your selections. Press **OK** to continue or **Cancel** to abort.
7. The Point Help page appears, displaying updated information about the point.

8. To download any changes to the module, leave the Point Help screen. An easy way is to pick the **Point Help** tab or button.

Trend Historian

Overview

NOTE Alert Server is able to store trends in Trend Historian only if the **historan.dll** file exists in the same directory as Alert EL or in the path. Trend Historian is enabled only if the **historian=Y** command is set in the [Logger] section of the **alc.ini** file. See the section **The Alert Tab** on page 5-31 for more information.

Trend Historian is a separate Windows application which stores trend data for display on the SiteScan 2000 for Windows Trend Graph (see the section **The Trend Graph** on page 3-59. It is launched automatically by Alert Server when necessary, and runs minimized on the desktop until closed by a user. It can also be launched by the user if not already loaded. Trend Historian cannot store New trend data until it receives a Trend Report from Alert Server. For more information, see the section **Trend Report** on page 4-7. Trend Historian is not supported by SS2W.

NOTE Trend Historian must be running in order to supply data to the SiteScan 2000 for Windows Trend Graph.

NOTE If Trend Historian cannot find its database files, such as when it is launched for the first time, it displays a pop-up asking where to store them. The default directory is **c:\ss2000\data**.

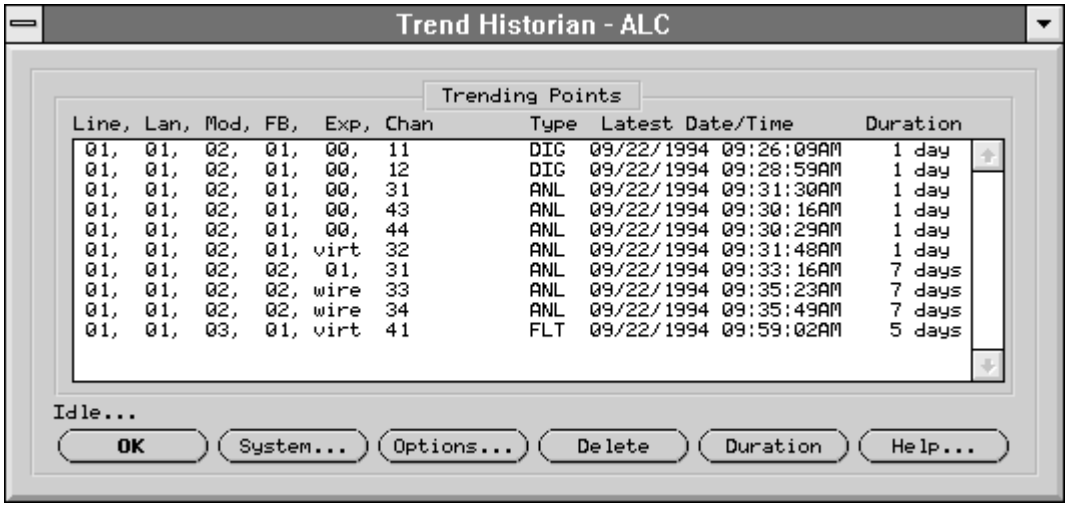


Figure 5-10: The Trend Historian screen

Trend Historian is password protected by the same passwords used by SiteScan 2000 for Windows. A password level of 7 is required in order to launch, maximize, or close Trend Historian.

Trend Historian lists each trend being stored in the System, along with information about each trend. This information includes the point address (or depending on the view option, the FB name and channel name), the type of trend (analog, digital, or floating point), the date/time of the latest data sample, and the user-defined duration.

The duration determines which trend samples are to be deleted when new data for a trend are received. Trend Historian first stores new trend data then deletes any data older than each trend's duration.

A status line above the buttons indicates what Trend Historian's current action is. This line displays "idle" ten seconds after the last message is displayed.

Trend Historian Buttons

Trend Historian includes several buttons which are defined below:

- The **System** button -- Pressing this button allows you to view the list of trends for a different system. The members of this list are all the Systems available in the current database.
- The **Options** button -- Pressing this button displays the Options pop-up. This pop-up allows you to change the sort order and time display of the trends on the Trend Historian screen, the default duration for storing trend data, and the database options.

- The **Delete** button -- Pressing this button allows you to delete old trend data before the duration expires. No communication may occur with Alert and SiteScan 2000 for Windows when the delete operation is in progress.

NOTE The **Delete** button does not reduce the size of the database files. For this purpose, use the database **Optimize** button (in the **Options** pop-up) *after* using the **Delete** button.

- The **Duration** button -- Pressing this button allows you to assign for the selected trend(s) how old a data sample can be (1-365 days) before Trend Historian can delete it. When new trend data is received, Trend Historian first stores the new trend data and then deletes any data older than each trend's duration. Double-clicking on a trend also allows you to change the duration. The default duration for trends received by Trend Historian for the first time is defined on the Options pop-up.
- The **Help** button -- Pressing this button allows you to view the Trend Historian help file.

Figure 5-11: The Trend Historian Options pop-up

Trend Historian Options

- The **Sort By Name** button -- Pressing this button causes Trend Historian to display the list of trends by the FB name and trend name (which is assigned on the FB parameter page).
- The **Sort By Address** button -- Pressing this button causes Trend Historian to display the list of trends by address. If a trend comes from a Trend microblock, its expander number is indicated as "wire" and its channel number is the trend's wire number (as reported on the Parameter or Status page). If a trend comes from an Exec 4.x module virtual point, its expander number is indicated as "virt."

- The **12 Hour Format** button -- Pressing this button causes Trend Historian to display the time for the latest sample in a 12-hour format (i.e., hour is in AM or PM).
- The **24 Hour Format** button -- Pressing this button causes Trend Historian to display the time for the latest sample in a 24-hour format (i.e., military time).
- The **Optimize** button -- Pressing this button organizes the database by rewriting its internal indexes and then deleting the original. The larger the database, the longer the time required. If not enough disk space exists, an error appears. (Use the **AltOptPath** entry in the [TrendHistorian] section of the **alc.ini** file to define an alternate location for storing temporary data while optimizing.)

NOTE Trend information cannot be stored or retrieved while the optimize operation is in progress.

- The **Clear** button -- Pressing this button causes Trend Historian to reinitialize the database by removing ALL TREND DATA in the current database.
- The **Set Path** button -- Pressing this button allows you to make Trend Historian store data in a new or different database. Each database has its own directory. If the database does not exist, Trend Historian prompts you to create it.
- The **Default Duration** field -- This field allows you to define the duration assigned to trends received by Trend Historian for the first time.

Storing Trend Data

When storing trend data in the database, Trend Historian requires that at least 1megabyte of free disk space exists. When enforcing this limit, Trend Historian deletes the oldest data first.

There are several ways to minimize the disk space required to store trend data. An easy way is to ensure that Alert EL does not also store trend data (for more information, refer to the *Alert EL User's Guide* in the **Alarms** section of the **Configuring the Database** chapter). Another way is to keep each trend **duration** as short as possible. Finally, use the **optimize** option to compress the database frequently.

We strongly recommend backing up the Trend Historian database regularly using the **Backup & Restore** utility. See the section **Backup & Restore** on page 7-7 for more information.

INI Configuration Manager

Overview

The INI Configuration Manager is a separate Windows application designed to simplify the process of making configuration changes to Liebert Windows applications. It is a user-friendly interface to the **most commonly changed** settings in the **alc.ini** file.

The tabs at the top of the screen represent the applications which the INI Configuration Manager may configure. When a tab is picked, the configuration settings for that application are displayed. Note that the INI Configuration Manager reads the contents of the **alc.ini** file only when it is launched.

Settings are arranged on the page in similar groups. Settings which have only two states (enabled or disabled) are represented by a box. These settings are enabled when the box is pushed in. Settings which require text can be changed by clicking on the text box and typing the text. A box at the bottom of each page explains the function of the currently selected setting. The **Tab** key (or **Shift-Tab**) can be used to scroll through an application's settings without making changes.

Saving and Exiting

The **Save** button writes the current changes to the **alc.ini** file. If changes have been made, but not saved, pressing the **Exit** button provides an opportunity to save the changes. Settings are saved to the **alc.ini** file only if changes have been made. Settings which are equal to the default values are not written to the **alc.ini** file because they are inherent to the operation of the application(s).

The INI Configuration Manager does not support multiuser (simultaneous) editing of the **alc.ini** file.

NOTE Changes to the **alc.ini** file are not written until you explicitly save them.

NOTE Some Liebert applications read **alc.ini** settings only when the application is started. If you change a configuration setting while an application is running, you may need to close the application and restart it before that setting takes affect.

The SiteScan Tab

This page displays the most frequently changed settings for SiteScan 2000 for Windows. The settings are grouped into these areas: Alarm Check, Printing, Miscellaneous, and Drive Setup. Any changes to this page are written to the **[SVW]** section of the **alc.ini** file when the settings are saved.

Figure 5-12: SiteScan 2000 for Windows INI settings

Alarm Check Section

Check When Connected This setting defines whether or not SiteScan 2000 for Windows checks for alarm and report data on behalf of Alert EL when SiteScan 2000 for Windows makes contact with a System. If this setting is disabled, Alert Server monitors only the Systems defined on the Alert page. Having **Check When Connected** disabled eliminates the need to wait in SiteScan 2000 for Windows while it collects data for Alert EL (see Caution below).

This feature is recommended in cases where Alert EL is configured to monitor a connection which SiteScan 2000 for Windows does not normally use.

CAUTION If **Check When Connected** is disabled, make sure that Alert Server can communicate with the gateway module.

(1) At the Workstation, verify that the connection to be monitored by Alert Server has **Active** and **Monitor this Port** enabled on the Connection Configuration screen. Otherwise, Alert Server will ignore any incoming data on that connection. If you are using a NETBIOS connection, we recommend connecting Alert EL to a different global console than the one used by SiteScan 2000 for Windows (must be console 1-4).

(2) At the gateway module, if the console which reports alarms is modem-connected, verify that it has the telephone number for the connection monitored by Alert Server. (Although each console stores all alarms, only one is required to send them in.) Otherwise, SiteScan 2000 for Windows will not receive the alarms and cannot break the connection when the gateway module calls in.

Interval This setting defines how often SiteScan 2000 for Windows checks alarms for Alert EL when **Check When Connected** is enabled. This setting is only used when Alert EL is running and SiteScan 2000 for Windows is connected to a System. The default is 15 seconds and the maximum is 65 seconds. Settings below 5 seconds will degrade SiteScan 2000 for Windows performance.

Miscellaneous Section

Parameter Version Warning This setting defines whether to display the "FB Parameter Mismatch" error (see the section **SiteScan 2000 for Windows Error Messages** on page 8-1). Enabling this setting causes SiteScan 2000 for Windows to display the error when it occurs. This setting should be disabled only for troubleshooting purposes.

Always Upload Parameters Enabling this setting causes SiteScan 2000 for Windows to immediately upload parameters when a Function Block is first displayed. This feature is useful for multiple-user systems.

Advanced Color Gathering Enabling this setting causes SiteScan 2000 for Windows to collect as many colors and prime variables as the gateway module can provide whenever a color is needed for display. When drawing the display, SiteScan 2000 for Windows collects the colors and prime variables from the computer's internal memory buffers, resulting in much faster drawing times. When this setting is enabled, the batch or serial color setting on the Setup page is ignored, although the dynamic refresh time is still valid. This setting should be disabled for faster operation over modem connections.

Fast Search This setting defines whether SiteScan 2000 for Windows loads the system database structure (**xxxcnfig.dat**) into memory for faster retrieval of information. When disabled, this information is accessed from the hard disk.

Time Set When this setting is enabled, SiteScan 2000 for Windows compares its current time and date with that of the gateway module(s) when SiteScan 2000 for Windows connects with a System. If the difference is less than or equal to 15 minutes, SiteScan 2000 for Windows sets the time and date in every gateway module on the line. If the difference is greater than 15 minutes (adjusted for time zone variations), and the **Error Wait** setting (in the Printing section) is enabled, SiteScan 2000 for Windows asks whether you want to make the broadcast. If the difference is greater than 15 minutes (adjusted for time zone variations), and the **Error Wait** setting is disabled, SiteScan 2000 for Windows continues without making a time/date broadcast. When **Time Set** is disabled, no time broadcast is made. Also see the **Lgtimeset** setting in the section **The alc.ini File** on page 5-37.

Demo Enabling this setting causes SiteScan 2000 for Windows to display specific items on the screen, such as times and intervals, and the occupied/unoccupied/demand level indicators. This feature is used for demonstration purposes, where the Trend and Setpoint Graph screens must be substituted with simulated data (see the **trenddemo** manual command in the section **Commands** on page 3-1). The **demo** setting should be disabled unless you are viewing the DEM system files.

Menu This setting defines whether SiteScan 2000 for Windows opens by displaying the menu bar at the top of the screen or the buttons at the bottom of the screen. Enabling this setting displays the menu.

Auto Logoff This setting defines the number of minutes of inactivity before SiteScan 2000 for Windows closes automatically. When SiteScan 2000 for Windows closes by this feature, configuration text is not updated. The default is **0** which disables this feature. Inactivity is defined as:

- SiteScan 2000 for Windows is not executing a command, such as a lengthy download.
- There are no key presses from the keyboard.
- There is no mouse movement over the SiteScan 2000 for Windows window. If SiteScan 2000 for Windows is minimized, or if another Windows application is covering SiteScan 2000 for Windows, then SiteScan 2000 for Windows does not see mouse movement.

Font This button allows you to configure the font for the text which appears on the tabs and on the Function Block Parameter and Status pages. This feature is useful for international users whose alphabet would have characters that are too small to read at the default text size. A non-proportional font such as Courier or Terminal is recommended. The default font is Wafer. When the button is pressed, configure the desired font using the Windows font list. Also see the **tabwidth** and **tabheight** settings in the section **The alc.ini File** on page 5-37.

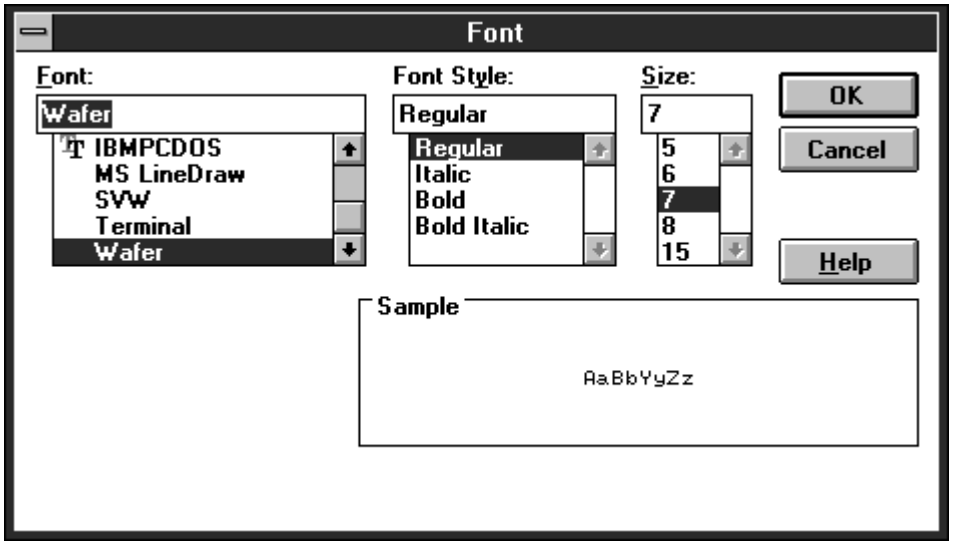


Figure 5-13: Configuring the FB font

Language This setting defines the name of a **.dll** file which contains messages and menus for the local language. The default is blank, which causes SiteScan 2000 for Windows to use the English messages and menus from its **.exe** application files. Contact Liebert Site Applications for information about local language **.dll** files.

Modem Reset This setting defines the modem reset string. This string represents a Hayes modem command which the Workstation sends to the modem (in Modem Connect mode only) whenever a dial-out or hang-up occurs. The default is shown below.

Default Entry:

ATHQ0V1E0S0=1M1S7=40

Printing Section

Error Wait This setting defines whether errors generated by SiteScan 2000 for Windows are directed to the screen or to the LPT port defined by the **Send Errors to** setting. When **Error Wait** is enabled, SiteScan 2000 for Windows directs errors to the screen and pauses the system until the errors are acknowledged. When **Error Wait** is disabled, any errors received are printed while the system moves on. This feature is very useful for unattended memory or schedule downloads.

CAUTION If **Error Wait** is disabled, don't forget to re-enable it when an unattended download is completed. Also, if the printer fails for some reason (out of paper, jammed, turned off, etc.), the computer may appear to be locked up when it is really waiting for a response from the printer.

Preprint Formfeed When this setting is enabled, SiteScan 2000 for Windows sends a form feed to the printer before printing when a print command (Print Parameters, Print Graphics) is issued from SiteScan 2000 for Windows. This feature is useful when alarms, errors, and print commands are sent to the same printer.

Send Errors to This setting defines the LPT port number used by SiteScan 2000 for Windows to print error messages. If **Default** is picked, Windows handles the printing using the default printer established in the Windows Control Panel. If **LPT1** or higher is picked, SiteScan 2000 for Windows prints to that port directly; if that port has a local printer (i.e., not a network printer), then form feeds are eliminated between individual error messages. This setting is only valid if the **Error Wait** setting is disabled.

CAUTION If the **Send Errors to** setting is set to **Default**, a form feed will occur after every error message that is printed.

Drive Setup Section

When the INI Configuration Manager is launched, the drive setup is automatically displayed for the System which is currently active (i.e., the primary System). Each System defined in the **alc.ini** file is represented by a tab and is listed in the drop-down box located to the right of the tabs. When a tab is picked, the drive mappings for that System are displayed.

To change between Systems, use any of the following methods:

- Click on one of the tabs.
- Use the **Arrow** keys on your keyboard.
- Use the **Arrow** buttons located to the right of the tabs.
- Use the drop-down box located to the right of the tabs.

NOTE The System which is displayed becomes the primary System ID and is written to the **alc.ini** file when you save the settings.

For example, if ABC is the primary System ID when you launch the INI Configuration Manager, the ABC drive mappings will initially be displayed in the Drive Setup section. Next, if you display the drive mappings for System DEF and exit, System DEF will become the primary System ID.

To **add** a System use the "**+**" button and to **delete** a System use the "**-**" button. The change becomes effective when you press the **Save** button, or press **Exit** and then answer **Yes** to save before exiting. The program prevents you from adding a System using an existing name.

Picking the tab for System **XXX** displays the **default drive mappings**. These default drive mappings are used by many Liebert applications to locate important files. When a new System is created, it inherits these defaults which are marked with **asterisks** on that System's custom drive setup. Any changes to a System's drive mappings override the defaults for that System and are not marked with asterisks. Any changes to the defaults on the System XXX page affect every System in which the defaults have not been overwritten.

To change a drive mapping, double click on it or select the desired drive and press the space bar. The Edit Drive Setting pop-up will appear. Type the new path and press the **OK** button. The new drive mapping is displayed, and the asterisk will disappear if the new drive mapping is

different from the default. NULL is a valid drive setting, as shown in Table 5-2.

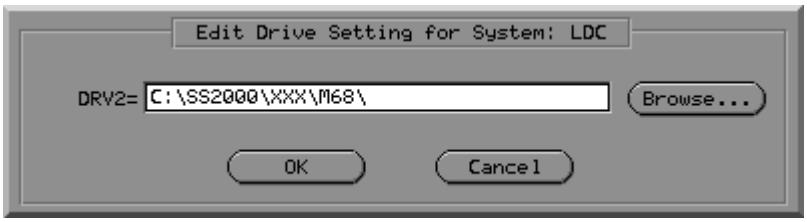


Figure 5-14: Editing a Drive Setting

For example, say you create a new System called ABC. It immediately inherits the default drive mappings, so all the drives are marked with asterisks. Next, say you change System ABC's drive mapping for DRV2. The asterisk for that drive should disappear from the System ABC's drive setup. Next, say that you display the drive setup for System XXX (these are the defaults) and change the drive mapping for DRV3. If you display the drive setup for any System which uses the default for DRV3, it will still have an asterisk, but it will show the new drive mapping. Remember that none of these changes become effective until the **Save** button is picked. Also remember that the System which is currently displayed becomes the primary System ID when the settings are saved.

The drive mappings are read when SiteScan 2000 for Windows is launched, when the user switches Systems from within SiteScan 2000 for Windows (using the **system** manual command), when Alert Server processes alarms, and when the current System name is changed.

The initial default drive mappings and their function are displayed in the table below. Some files identified as a working copy are also located in another directory as a permanent copy. This arrangement is useful for computers having a RAM drive. A RAM drive is where a part of memory is set aside and designated with a different drive letter. If a RAM drive is not used, set the working copy drive settings to NULL.

CAUTION If you are using a RAM drive, do not delete the line in the **config.sys** file which establishes the drive. Doing so would prevent SiteScan 2000 for Windows from running.

Table 5-2: Default Drive Mappings

Drive Mapping	Purpose
DRV1 = c:\ss2000\temp\	Used by EIKON for temporary files
DRV2 = c:\ss2000\xxx\m68\	custom m68 sysv*.dat, *.obj, sysalarm.txt
DRV3 = c:\ss2000\xxx\	xxxcnfig.txt
DRV4 = c:\ss2000\xxx\	xxxcnfig.dat (permanent copy)
DRV5 = NULL	xxxcnfig.dat (working copy) if NULL, uses DRV4
DRV6 = c:\ss2000\xxx\	xxxparam.dat (permanent copy)
DRV7 = NULL	xxxparam.dat (working copy) if NULL, uses DRV6
DRV8 = c:\ss2000\xxx\	xxxsched.dat (permanent copy)
DRV9 = NULL	xxxsched.dat (working copy) if NULL, uses DRV8
DRV10 = c:\ss2000\xxx\	xxxpassw.dat
DRV11 = c:\ss2000\xxx\	*.bin (floor plans, equipment drawings, maps, etc.)
DRV12 = c:\ss2000\pic\	standard drawings, i.e., setpoint graph, schedule graph, trend graph (zzz*.bin, *.scr)
DRV13 = c:\ss2000\temp\	reserved for future use
DRV14 = c:\ss2000\m68\	master m68 sysv*.dat, *.obj, *.lib, sysalarm.txt, *.fb
DRV15 = c:\ss2000\xxx\	report files for alarms and messages (*.rep), xxxalarm.txt
DRV16 = c:\ss2000\temp\	reserved for future use
DRV17 = c:\ss2000\m68\	*.s19
DRV18 = c:\ss2000\temp\	reserved for future use

The Alert Tab

The Alert page displays the most frequently changed settings for Alert Server. The settings for Alert Server are grouped into these areas: Polling, Systems, and Miscellaneous. Any changes to this page are written to the **[Logger]** section of the **alc.ini** file when the settings are saved.

Figure 5-15: Alert INI settings

Polling Section

GCM Poll Start This setting defines the *first* address of a range of DCLANs which Alert Server monitors and which SiteScan 2000 for Windows checks the identity of when connecting. The end of the range is defined by the **GCM Poll End** setting. If none of the "GCMPOLL" settings are defined, only the DCLAN defined as "GCMmaster" is checked.

GCM Poll End This setting defines the *last* address of a range of DCLANs which Alert Server monitors and which SiteScan 2000 for Windows checks the identity of when connecting. The beginning of the range is defined by the **GCM Poll Start** setting. If none of the "GCMPOLL" settings are defined, only the DCLAN defined as "GCMmaster" is checked.

New RTC This setting defines how SiteScan 2000 for Windows gathers alarms on systems with multiple DCLANs. When this is enabled, SiteScan 2000 for Windows collects alarms from all DCLANs in the System (within the range defined by the **GCM Poll Start** and **GCM Poll End** settings) which have alarms. When this is disabled, SiteScan 2000 for Windows polls for alarms from each DCLAN in round robin fashion.

NOTE The **NEWRTC** setting is compatible only with DCLAN V2.8 software or later.

Alarm Check This setting defines how often Alert Server checks for alarms on connections with "Monitor this port" enabled (see the section **Connection Configuration** on page 3-17). The default is 15 seconds and the maximum is 65 seconds. The lower the number, the greater the chance that SiteScan 2000 for Windows cannot dial out on a connection that Alert Server is monitoring. Settings below 5 seconds should be used only when **Check When Connected** is disabled and Alert Server is monitoring different connections than what SiteScan 2000 for Windows uses.

Gateway Alarm Trip This setting defines a number of consecutive unsuccessful attempts to communicate with a gateway module, which when achieved, causes Alert Server to generate a dead gateway module alarm. The default is **0**, which prevents Alert Server from generating the alarm. For example, if this setting is set to 10, an alarm is generated for every ten unsuccessful attempts in a row to communicate with that gateway. The count of unsuccessful attempts is reset to zero when SiteScan 2000 for Windows connects to a gateway.

Gateway Alarm ID This setting defines an Alarm ID (up to eight characters) that is generated when a dead gateway module alarm is generated. The default is "**gateway**". Because there is no communication with the gateway module, Alert Server assigns the alarm the current System ID and a line number of 1. For more information about Alarm IDs, see the section **Alarms** on page 4-3.

Systems Section

List This setting defines extra Systems which are monitored for alarms by Alert Server (Alert Server automatically monitors the primary System displayed in SiteScan 2000 for Windows). The successive Systems are separated by a space.

Example: ABC DEF GHI

File This setting defines a text file (usually called **users.lst**) containing extra Systems which are monitored for alarms by Alert Server in addition to the primary System. The successive Systems in the file are separated by a return. Unless a path is defined, SiteScan 2000 for Windows will search for the file in the **c:\ss2000** directory. Text files can be created directly using the **notepad.exe** program, or by using a word processor and saving the file as a text file.

Example of USERS.LST file:

ABC

DEF

GHI

Miscellaneous Section

Historian This setting enables Alert Server and SiteScan 2000 for Windows to use Trend Historian to store and retrieve New trend data. Note that Alert Server can store trends in Trend Historian only if the **historan.dll** file exists in the same directory as Alert EL or in the path.

The Eikon Tab

The Eikon page displays the most frequently changed settings for Eikon. Any changes to this page are written to the **[Eikon]** section of the **alc.ini** file when the settings are saved. The Eikon settings should not normally be changed by a SiteScan 2000 for Windows operator. For more information about these settings, pick the **Help** button.

The Draw Tab

The Draw page displays the most frequently changed settings for Draw for Windows, an application which creates the color graphic images displayed by SiteScan 2000 for Windows. Any changes to this page are written to the **[DRAW]** section of the **alc.ini** file when the settings are saved. The Draw settings should not normally be changed by a SiteScan 2000 for Windows operator. Draw is not supported by SS2W.

Figure 5-16: Draw INI settings

Menu File This setting locates the **drawmenu.txt** file, which defines menu bar definitions for the Draw for Windows screen.

File Open Dir This setting defines which directory Draw for Windows initially points to when opening or saving a file (**.gfx** files).

NOTE An absolute path or a drive setting may be specified for directory settings.

Example:
c:\ss2000
or
DRV11

Library File This setting locates the **draw.lib** file, which defines internal symbols used by Draw for Windows.

The General Tab

The General page displays the most frequently changed settings which may affect multiple Liebert Windows applications. Any changes to this page are written to the **[General]** section of the **alc.ini** file when the settings are saved.

Figure 5-17: General INI settings

Global Font This setting defines the font used for static text in brown dialog boxes. The font name must be entered exactly as it appears on the Windows font list, followed by the size.

Example:
Times, 12

Disable Key Checking This setting defines which parallel ports are not checked for the existence of a hardware key. This feature prevents Liebert software from becoming confused when special pieces of equipment are connected to the computer. Buttons are displayed only for the parallel ports which physically exist on the computer.

The alc.ini File

Overview

The **alc.ini** file is an initialization file that consists of different sections used by various Liebert applications. These applications usually read the **alc.ini** file when they are launched and sometimes while the application is being used. Only the settings which are not commonly changed are presented here because the rest of the settings are either set by the program itself or they can be changed using the **INI Configuration Manager**, a separate Windows application. The contents of the **alc.ini** file are not case sensitive, and no spaces should surround the equal signs.

[SVW] Section

Lgtimeset=No This setting defines whether the workstation sends a date & time broadcast to the DCLAN every time SiteScan 2000 for Windows or Alert Server requests alarm data with a "New RTC" command. This date & time broadcast does not compensate for time zone variations. See the **New RTC** setting in the section **The Alert Tab** on page 5-31 for more information.

NOTE This setting is compatible only with DCLAN V2.9 or higher, and it requires that **New RTC** setting be enabled.

Livegfbtimeout=20 This setting defines the number of quarter-second intervals that SiteScan 2000 for Windows waits for a Function Block to send its microblock output values for display on a Live GFB. The default is 20 which yields a time of 5 seconds. This feature is useful for Function Blocks which require longer amounts of time to gather data, such as FBs running on some third-party interfaces.

Replywaitseconds=2 This setting defines the number of seconds that SiteScan 2000 for Windows waits for a character in reply after attempting to communicate over a connection. If a reply is not received in this time, SiteScan 2000 for Windows may try again or give up, depending on the type of information needed and the number of unsuccessful attempts.

Tabwidth=176
Tabheight=10
These settings define the size of the tabs which appear on the upper left corner of each frame. International users may find it necessary to adjust

these settings after changing the font used on the tabs and Function Block parameter and status pages (see the **font** setting in the section **The SiteScan Tab** on page 5-24).

[EIKSERVE] Section

LibraryFile=path This setting locates the **eikon.lib** file, which defines the microblock icons, microblock pop-ups, and menu bars for the Live GFB screen. The default path is **c:\ss2000\eikon.lib**.

MenuFile=path This setting locates the **eikmenu.txt** file, which contains initialization information for the Live GFB screen. The default path is **c:\ss2000\eikmenu.txt**.

[TrendHistorian] Section

AltOptPath=path This setting defines an alternate location to use for storing temporary data while optimizing the database.

Disabled=Yes This setting indicates that Trend Historian has shut down because of errors. When set to **Yes**, Alert Server will not attempt to launch Trend Historian. Typical causes for this situation are that the computer ran out of memory or disk space. If Trend Historian is launched by a user, it displays messages for recommended actions.

UserName=XXX This setting defines the System for which Trend Historian will display a list of trends when it is launched.

Clocks - Software and Hardware

Overview

The Workstation computer has two clocks: a hardware (battery backed) clock and a DOS (or software) clock. The hardware clock runs continuously, even when the computer is turned off. When the computer is turned on, it reads the current time and date from the hardware clock and sets the DOS clock to match it. From then on, the Workstation uses the DOS clock for time and date information until the computer is turned off.

Checking the DOS Clock

SiteScan 2000 for Windows uses the DOS clock and displays this time on the screen. You can check the DOS clock at any time from a DOS prompt with the following commands:

time [Enter] The computer will respond with the current DOS clock time and ask you to set a new time. If the time is correct press [Enter].

date [Enter] The computer will respond with the current DOS clock date and ask you to set a new date. If the date is correct press [Enter].

NOTE Using these commands to change the DOS clock does not affect the hardware clock in older computers.

Timeset Feature

Module clocks can be reset from the Workstation's DOS clock every time the Workstation contacts a System. If the difference between the Workstation clock and the gateway module clock is greater than 15 minutes, SiteScan 2000 for Windows may ask if you want to reset the module clock (see the **Time Set** command in the section **The SiteScan Tab** on page 5-24). If you answer **yes**, the Workstation's time and date is sent to the gateway module, thereby synchronizing all the modules on the System. If you answer **no**, the time and date on the System remains unchanged. However, if the time and date difference is less than or equal to 15 minutes, an automatic synchronization broadcast is made. The Timeset feature is enabled by the **Timeset** command in the **alc.ini** file.

Resetting the Hardware Clock

The types of hardware clocks used in Workstation computers vary widely. Each type requires a different procedure to set the time and date. To set your Workstation's hardware clock, follow the manufacturer's instructions which were shipped with your computer.

Daylight Saving Time

In Windows 3.x, when a Daylight Saving Time transition occurs, you must manually change the Workstation's hardware clock. If you forget, the automatic **Time Set** feature will remind you when you contact the CMnet after the transition occurs. This step is not necessary in Windows 95 if the Time/Date properties are set to automatically make the transition for Daylight Saving Time (located in the Control Panel).

Changing the Module Clocks

The CMnet must have one XFR or XFG Function Block downloaded (as FB no. 14) into one module per CMnet. These Function Blocks allow the operator to specify dates on the parameter page for Daylight Saving Time transition for several years in advance. When the dates occur, the FB broadcasts the new time on the CMnet.

Workstation Directories

Overview

When the Workstation software is installed, several directories are created on the computer's hard disk for specific purposes. The default directory structure is as follows (where **xxx** stands for the three-character System name):

Table 5-3: Workstation Directory Structure

Directory	Description of Contents
c:\ss2000	System files: executable files, batch files, fonts, etc.
c:\ss2000\m68	Master M68: module driver FBs, executable files.
c:\ss2000\pic	Graphic files: utility screen files
c:\ss2000\xxx	System files: configuration text, report files, graphic files, etc.
c:\ss2000\xxx\m68	Custom M68: System-related FB files, other downloadable files.

Custom and Master M68 Directory File Structure

SiteScan 2000 for Windows software incorporates *custom M68* directories under each System directory. These custom M68 directories include the Function Blocks and other downloadable files which are particular and compatible to each System.

The **\ss2000\M68** directory, called the *master M68* directory, previously contained a variety of files such as linker files, module driver Function Blocks, library files, Graphic Function Blocks (GFBs) and various executable and other non-FB files (as shown below).

Table 5-4: Previous M68 files

File	Function
buildmod.bat buildsub.exe s19cnv.exe link68.exe search.exe	linker -- links portions of other files together to create a memory map which is then downloaded into the module.
sysvyyy.dat yyy.obj	module driver -- interfaces between the graphic function block and the module hardware.
lib400.obj eep400.obj	library files -- contain common routines which are called by GFBs and module drivers.

Table 5-4: Previous M68 files

mxram.obj lq400.sub cpnum0.obj . . . cpnum15.obj	miscellaneous download files
sysvxxx.dat xxx.obj xxxrp.obj	graphic function block
$$$tmp.arg $$$tmp.sub $$$tmp.map	Byproducts of the linking process, overwritten each time memory is downloaded.

The files required for the master M68 directory have been reduced as shown below. The reasons for this change are as follows:

- To reduce the number of files.
- To reduce the opportunities for the files to become unsynchronized as they are changed.

The linker function has been consolidated into **fblink.exe** and moved into the **c:\ss2000** directory.

Table 5-5: Current M68 files

File	Function
yyy.fb	module driver -- interfaces between the graphic function block and the module hardware.
xxx.fb	graphic function block
$$$tmp.arg $$$tmp.sub $$$tmp.map	Byproducts of the linking process, overwritten each time memory is downloaded.

These simplification steps will help to streamline software releases and increase file compatibility and reliability.

Using Bitmaps

SiteScan 2000 for Windows can display bitmaps on a graphic frame, allowing you to further enhance screens with images such as scanned color logos. Bitmaps can be displayed using two methods. The first method allows one or more bitmaps to be placed into a graphic drawing when it is created using Draw for Windows V2.5 or later. The second method allows SiteScan 2000 for Windows to display a single bitmap having the same filename (but with a **.bmp** extension) before it displays the graphic frame.

For bitmaps placed into a graphic drawing

With Draw for Windows V2.5 or later, bitmaps can be easily placed into a graphic drawing at the desired position. In order to display the bitmap, SiteScan 2000 for Windows must be able to find the bitmap file. If no path is defined when the bitmap is placed in the graphic drawing, then the bitmap file (**.bmp**) must exist in the same directory as the graphic file (**.gfx**). See the section **The Bitmap Function** on page 6-60 for more information.

For bitmaps not placed into a graphic drawing

SiteScan 2000 for Windows can display a single bitmap file and then draw the graphic drawing on top of the bitmap.

- The bitmap must be located in the System directory (**\ss2000\xxx**) and must use the same filename (but with a **.bmp** file extension) as the graphic drawing (**.bin** or **.gfx** file) with which it will be displayed.
- The maximum size for a bitmap to be displayed varies according to the resolution.

Table 5-6: Maximum Bitmap Sizes

Screen Resolution	Horizontal (pixels)	Vertical (pixels)
640x480	594	354
800x600	753	473
1024x768	977	641

- SiteScan 2000 for Windows displays the bitmap in the upper left corner of the graphic frame.

When SiteScan 2000 for Windows opens a graphic frame, it searches in the following order for the file to display.

- Bitmap file -- **.bmp** This file is always displayed if found.
- Draw for Windows file -- **.gfx** (see the section **Save** on page 6-10).
- Old Draw file -- **.bin** This file is not displayed if the **.gfx** file is found.

The Terminal Feature

This feature is meant only for advanced users and is available only when SiteScan 2000 for Windows is connected to a System. When the **terminal** command is issued from the manual command pop-up (or is picked from the **Utilities** main menu), the SiteScan 2000 for Windows frame goes black and the keyboard is monitored for "Crosstalk" commands. These commands function for either serial port or Netbios connections.

To exit from Terminal mode, leave the screen. This can be accomplished using one of the following methods.

- Pick another tab.
- Issue another manual command.
- Pick a button from the bottom of the screen.

Going Metric

SiteScan 2000 for Windows can display certain Function Block information with metric values, such as on the Status page when certain procedures are followed.

How to Set up Metric Setpoints

To configure a Function Block to display setpoint values in degrees Celsius, use the following procedure.

NOTE This procedure is only necessary for FBs containing one of the "Zone Setpoint" microblocks.

---

1. Enable the **metric** setting on the Eikon tab of the INI Configuration Manager.
2. Launch Eikon V2.0 (or later) and open an existing GFB (having the **xxx_gfb.bin** or **xxx.eik** filename) or draw a new GFB. For existing GFBs, delete any Zone Setpoint microblocks and reinsert them.
3. Save the GFB using the **filename.eik** naming convention.
4. From the **Options** menu, enable the **PackFB** option.
5. From the **GFB** menu, pick the **Make FB** command. Eikon will store the **xxx.fb** file in the directory specified by the **MakeFB Destination** setting on the Eikon tab of the INI Configuration Manager.
6. Compile the configuration text.
7. When using SiteScan 2000 for Windows, the FB will display the setpoint values in degrees Celsius on the Status page.

How to Set up Metric Inputs

To configure a Function Block to display Input values in degrees Celsius on the Status page, use the following procedure.

1. In SiteScan 2000 for Windows, display the Parameter page of the FB to be configured.
2. Pick the Point Help button, or press the **Esc** key and issue the **pointhelp** manual command. The Point Help page will appear.
3. Select the Input point to be changed.
4. Pick the **Configure** button. A pop-up will appear, displaying only the signal types which are compatible for the module which contains the point.
5. If the sensor is a thermistor, select the "Thermistor, Deg C" point type. If the sensor is a linear device, select the appropriate point type (i.e., "Current, 4-20 mA", "Current, 0-20 mA", "Voltage, 0-5V"). Press **OK** to continue or **Cancel** to abort.
6. On the pop-up which appears next (see Figure 5-9), define the parameter configuration which is appropriate for the point. For linear devices, enter the Range and Operating Point in degrees Celsius. Press **OK** to continue or **Cancel** to abort.
7. The Point Help page appears, displaying updated information about the point.
8. To download any changes to the module, leave the Point Help screen. An easy way is to pick the **Point Help** tab.
9. The FB will display the Input values in degrees Celsius on the Status page.

Dynamic Data Exchange (DDE)

Dynamic Data Exchange (DDE) allows you to automatically share data between Windows applications using links. DDE links require both a server and a client. The **server** contains the original data; the **client** uses that data. The client may request data from, or send instructions to the server application. SiteScan 2000 for Windows (V2.5 or later) supports DDE as a server application. Both the server and the client must be running for the link to remain active.

Requesting Information

For faster operation, we recommend launching the client application from within SiteScan 2000 for Windows using the **runmin** manual command. See the section **Commands** on page 3-1 for more information.

SiteScan 2000 for Windows allows client applications to perform the following actions using DDE:

- Query for **parameter** and **status** values -- The parameter or status code (obtain using the **Alt-Pick** feature described in the Parameter Page section) must be referenced as the item name, and the current System ID must be used as the topic name (the item and topic are described under **DDE Links**). Status queries are successful if SiteScan 2000 for Windows is connected to the System containing the data.
- Execute **manual commands** -- These should be restricted to navigation and to simple parameter changes (see the section **Manual Commands** on page 3-1 for more information). Although this action is supported under both the **sytem** topic and the **xxx** topic, use of the manual command "**system xxx**" is supported only under the **system** topic.

  When requesting a DDE link using the topic name of **xxx**, the topic name must agree with the System ID of the System to which SiteScan 2000 for Windows is connected in order for the DDE link to succeed. The DDE link will fail if you change Systems inside SiteScan 2000 for Windows while a DDE link is open under an **xxx** topic.

SiteScan 2000 for Windows can also report back (using the **system** topic) the status of whether it is **ready** or is too **busy** to complete a requested transaction. A busy status may occur, for example, if SiteScan 2000 for Windows is updating a frame or is collecting alarms or other report data. To avoid a busy status and for faster data exchange, we recommend these actions:

- Minimize SiteScan 2000 for Windows -- this prevents delays while frames are repainted.
- Close Alert EL -- this prevents delays while report data is collected.

Some client applications provide a method of setting the maximum time to wait for the server application to respond. We recommend using this feature if it is available.

When processing DDE transactions, SiteScan 2000 for Windows displays a banner stating "Processing DDE transactions". If the client application issues a command which causes SiteScan 2000 for Windows to display a different banner, the text "(DDE) " is displayed at the beginning of the new banner's message. These actions are taken so there is some indication that another application is in control.

NOTE When processing DDE transactions, SiteScan 2000 for Windows suspends all user-related activity, such as dynamic updating, manual commands, and the pressing of on-screen buttons and tab labels. Press the **Esc** key to break a DDE link.

DDE Links

A DDE link must contain the following information:

1. **Application** -- This identifies the server application. For SiteScan 2000 for Windows, the application name is **EMS**.

2. **Topic** -- This identifies the specific server application file which contains the original data. SiteScan 2000 for Windows supports two topics: "**system**" and "**xxx**", where **xxx** stands for the 3-character System ID of the currently connected System. You can establish a DDE link with SiteScan 2000 for Windows using either topic, but each topic supports different items.

3. **Item** -- This identifies the location or name of the original data. In addition to the items supported under the **system** topic (described below), SiteScan 2000 for Windows supports as an

item a manual command or a query for a parameter or status value.

Both topics allow you to execute manual commands, but the **xxx** topic cannot handle changing systems (see the section **Requesting Information** on page 5-48).

On the other hand, the **system** topic cannot query for parameter and status values, but it supports the following listed items. These items are supported by other Windows DDE-compatible applications under the **system** topic and provide an easy method for determining what DDE functionality is supported by the application.

- **SysItems** -- This item returns a tab-separated list of the items supported by the server application. The list for SiteScan 2000 for Windows includes "SysItems", "Topics", "Status", and "Formats".
- **Topics** -- This item returns a tab-separated list of the topics supported by the server application. The list for SiteScan 2000 for Windows includes "System" and the 3-character name for the current System ID.
- **Status** -- This item returns either "Ready" or "Busy".
- **Formats** -- This item returns "Text" because that is the only format which SiteScan 2000 for Windows supports.

DDE Examples

Most Windows applications capable of running as a DDE client can be used to request data from or send instructions to SiteScan 2000 for Windows. Typically these applications require using a proprietary macro language to implement the data exchange. Included below are some examples using spreadsheet applications such as Lotus 123 and Microsoft Excel. ***The DDE feature of SiteScan 2000 for Windows is not dependent upon any particular third party software.*** These examples are included for illustration purposes only.

The DDE links in these examples are manually activated when the appropriate button is pressed to execute a macro. Once the data is obtained in the client application, it can be configured as desired for custom reporting. For example, a spreadsheet allows you to format the data, place it into formulas and tables, and display it on various types of graphs.

Sample Lotus 1-2-3 DDE Template

This spreadsheet collects timed local override data and runtime data from SiteScan 2000 for Windows and places it into a table so that percentages can be calculated. The spreadsheet could be modified to multiply the percentages by a definable amount for billing purposes. The Setpoint macro allows you to edit a particular zone's heating setpoint.

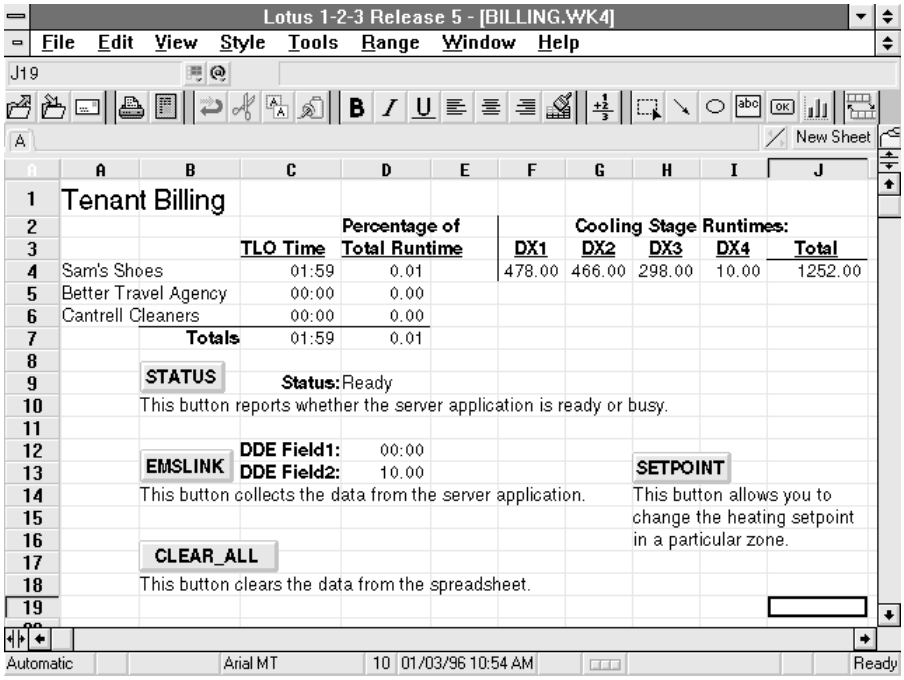


Figure 5-18: DDE Example for Lotus 1-2-3

Macros for a Sample Lotus 1-2-3 DDE Template

Name	Function
STATUS	{DDE-OPEN "EMS";"SYSTEM";D9}{QUIT} {DDE-USE D9} {DDE-REQUEST D9;"STATUS"} {DDE-CLOSE}
EMSLINK	{DDE-OPEN "EMS";"ALC";D12}{ERROR 1}{QUIT} {DDE-USE D12} {DDE-REQUEST D12;"PIU23_1SM409"}{ERROR 2}{QUIT} {EDIT-QUICK-COPY C4;D12} {DDE-REQUEST D12;"PIU24_1SM409"}{ERROR 2}{QUIT} {EDIT-QUICK-COPY C5;D12}

```
                {DDE-REQUEST D12;"PIU26_1$S$M409"}{ERROR 2}{QUIT}
                {EDIT-QUICK-COPY C6;D12}
                {DDE-CLOSE}
                {DDE-OPEN "EMS";"ALC";D13}{ERROR 1}{QUIT}
                {DDE-USE D13}
                {DDE-REQUEST D13;"RTU1_1$S$N189$RTIM"}{ERROR 3}{QUIT}
                {EDIT-QUICK-COPY F4;D13}
                {DDE-REQUEST D13;"RTU1_1$S$N192$RTIM"}{ERROR 4}{QUIT}
                {EDIT-QUICK-COPY G4;D13}
                {DDE-REQUEST D13;"RTU1_1$S$N195$RTIM"}{ERROR 5}{QUIT}
                {EDIT-QUICK-COPY H4;D13}
                {DDE-REQUEST D13;"RTU1_1$S$N198$RTIM"}{ERROR 5}{QUIT}
                {EDIT-QUICK-COPY I4;D13}
                {DDE-CLOSE}

SETPOINT        '{DDE-OPEN "EMS";"ALC"}{ERROR 1}{QUIT}
                {DDE-EXECUTE "EDIT VAV17_1$SETPT$HOPO"}
                {DDE-CLOSE)

ERROR           {DEFINE ERR_CODE}
                {IF ERR_CODE=1}{LET MESSAGE;"DDE link not active."}
                {IF ERR_CODE=2}{LET MESSAGE;"DDE information request failed."}
                {IF ERR_CODE=3}{LET MESSAGE;"DDE information request failed."}
                {IF ERR_CODE=4}{LET MESSAGE;"DDE information request failed."}
                {IF ERR_CODE=5}{LET MESSAGE;"DDE information request failed."}
                {DDE-CLOSE}

CLEAR_ALL       {LET D9;0}
                {LET D12;0}
                {LET D13;0}
                {LET C4;0}
                {EDIT-QUICK-COPY C4..C6;D12}
                {EDIT-QUICK-COPY F4..I4;D13}
                {CALC}
                {QUIT}
```

Sample Excel DDE Template

This spreadsheet collects equipment runtime data from SiteScan 2000 for Windows and places it into a table so that totals can be calculated. The spreadsheet could be modified to trigger messages if the runtimes exceed a certain amount.

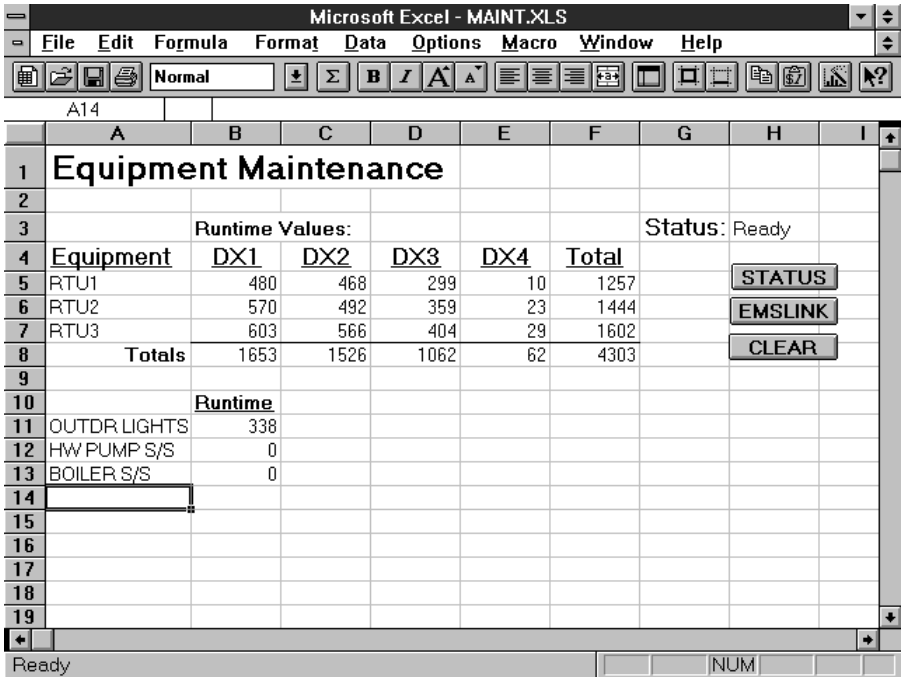


Figure 5-19: DDE Example for Excel v4.0

Macros for a Sample Excel v4.0 DDE Template

Name	Function
LINK1	=INITIATE("EMS", "SYSTEM") =SET.NAME("STATUS",REQUEST(LINK1,"STATUS")) =FORMULA(STATUS,MAINT.XLS!$H$3) =TERMINATE(LINK1) =RETURN()
LINK2	=INITIATE("EMS","ALC") =SET.NAME("RTU1_DX1",REQUEST(LINK2,"RTU1_1SN189$RTIM")) =FORMULA(RTU1_DX1,MAINT.XLS!$B$5) =SET.NAME("RTU1_DX2",REQUEST(LINK2,"RTU1_1SN192$RTIM")) =FORMULA(RTU1_DX2,MAINT.XLS!$C$5) =SET.NAME("RTU1_DX3",REQUEST(LINK2,"RTU1_1SN195$RTIM")) =FORMULA(RTU1_DX3,MAINT.XLS!$D$5)

```
=SET.NAME("RTU1_DX4",REQUEST(LINK2,"RTU1_1$S$N198$RTIM"))
=FORMULA(RTU1_DX4,MAINT.XLS!$E$5)
=SET.NAME("RTU2_DX1",REQUEST(LINK2,"RTU2_1$S$N189$RTIM"))
=FORMULA(RTU2_DX1,MAINT.XLS!$B$6)
=SET.NAME("RTU2_DX2",REQUEST(LINK2,"RTU2_1$S$N192$RTIM"))
=FORMULA(RTU2_DX2,MAINT.XLS!$C$6)
=SET.NAME("RTU2_DX3",REQUEST(LINK2,"RTU2_1$S$N195$RTIM"))
=FORMULA(RTU2_DX3,MAINT.XLS!$D$6)
=SET.NAME("RTU2_DX4",REQUEST(LINK2,"RTU2_1$S$N198$RTIM"))
=FORMULA(RTU2_DX4,MAINT.XLS!$E$6)
=SET.NAME("RTU3_DX1",REQUEST(LINK2,"RTU3_1$S$N189$RTIM"))
=FORMULA(RTU3_DX1,MAINT.XLS!$B$7)
=SET.NAME("RTU3_DX2",REQUEST(LINK2,"RTU3_1$S$N192$RTIM"))
=FORMULA(RTU3_DX2,MAINT.XLS!$C$7)
=SET.NAME("RTU3_DX3",REQUEST(LINK2,"RTU3_1$S$N195$RTIM"))
=FORMULA(RTU3_DX3,MAINT.XLS!$D$7)
=SET.NAME("RTU3_DX4",REQUEST(LINK2,"RTU3_1$S$N198$RTIM"))
=FORMULA(RTU3_DX4,MAINT.XLS!$E$7)
=SET.NAME("OUTLITES",REQUEST(LINK2,"LTG_1$S$M080$RTIM"))
=FORMULA(OUTLITES,MAINT.XLS!$B$11)
=SET.NAME("HWPUMP",REQUEST(LINK2,"HOT_1$S$M080$RTIM"))
=FORMULA(HWPUMP,MAINT.XLS!$B$12)
=SET.NAME("BOILER",REQUEST(LINK2,"HOT_1$S$M081$RTIM"))
=FORMULA(BOILER,MAINT.XLS!$B$13)
=TERMINATE(LINK2)
=RETURN()
```

ClearAll (a)

```
=SELECT("R5C2:R7C5")
=CLEAR(3)
=SELECT("R11C2:R13C2")
=CLEAR(3)
=SELECT("R3C8")
=CLEAR(3)
=SELECT("R14C1")
=RETURN()
```

* * *

6 Draw for Windows

What's New

Draw for Windows is an Liebert Windows application designed for use with SiteScan 2000 for Windows. The primary function of Draw is to produce the color graphics which are an integral part of SiteScan 2000 for Windows. The following new feature is available in Draw version 2.6.

1. Support for **Windows NT** has been added.

The Draw for Windows Screen

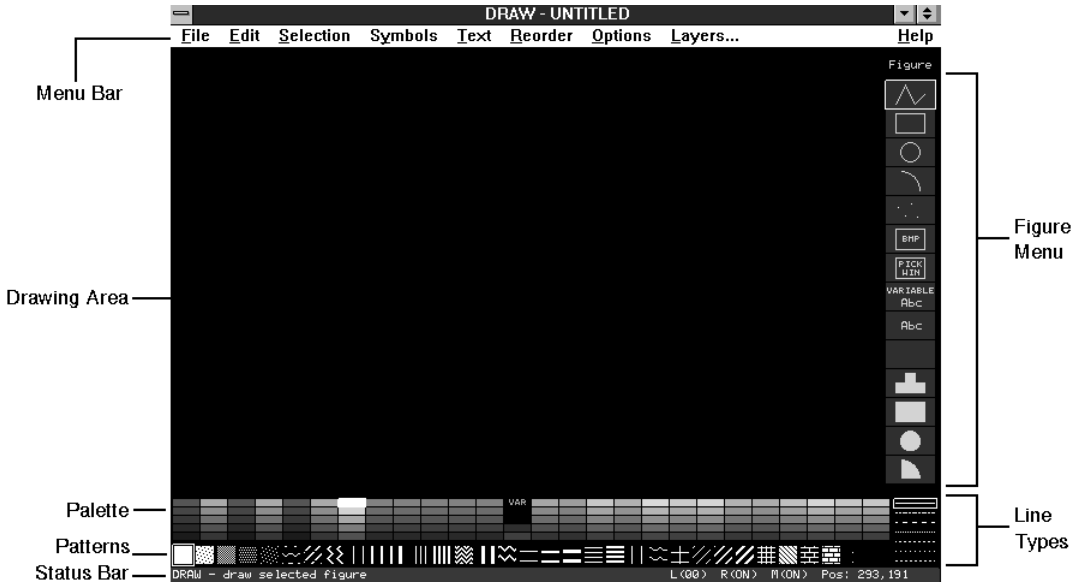


Figure 6-1: The Draw for Windows Screen

The **Menu Bar** contains menus of commands which carry out similar actions. You can use the mouse or the keyboard to execute commands from each menu. Commands that have an underbar beneath a letter can be executed by pressing **Alt** and the letter simultaneously. In addition, menu items are disabled whenever this makes sense. For example, the **Reorder** menu is disabled when there are less than two items in the drawing area.

The **Status Bar** is the blue line at the bottom of the screen which displays useful information about Draw for Windows. To hide the Status Bar, pick **Prompt** from the **Options** menu. The following items are displayed here:

- a text description of the active command.
- the active **Layer** (i.e., the one that is currently being edited) which can be increased/decreased by the **+** and **-** keys. More than one layer may be visible at a time.
- the status of the **Redraw** feature (enabled/disabled by the **R** key).
- the status of the **Magnetism** feature (enabled/disabled by the **M** key).
- the position of the cursor in the drawing area in **X, Y** pixel coordinates.

The **Figure Menu** is located at the right side of the screen. It contains the drawing tools used to draw lines, boxes, circles, arcs, ellipses, dots, pickable windows, variable text, text, and filled shapes.

The **Drawing Area** is the area in the middle of the screen where graphic images are created. Although Draw for Windows can handle images which are wider and taller than a single screen (see the section **Changing Views** on page 6-3), we recommend using a maximum size of 594 pixels wide by 354 pixels high. This limit corresponds to the maximum display area of a single frame in SiteScan 2000 for Windows at 640 by 480 resolution. The position of the cursor is indicated on the Status Bar.

The **Palette** is the color menu at the bottom of the screen which displays all of the possible colors. Draw for Windows provides 128 standard colors and variable color. To hide the Palette, pick **Palette** from the **Options** menu. These colors in particular are important:

- **Variable color** (indicated by the letters "var" -- Used as a *foreground color* to draw colors which vary depending on a

defined condition. Used as a *background color* to draw transparent black.)

- **Reserved** (located immediately below "var" -- Reserved for future use.)
- **Solid black** (located two below "var")

The **Patterns** displayed between the palette and the status bar are attributes which can be assigned to solid figures. A background color is required for solid objects with a pattern.

The **Line Types** displayed below the Figures menu are attributes which can be assigned to lines and hollow objects. A background color is required for lines and hollow objects having a line type other than a solid line. The top line (or solid line) is used most often for drawing zone boundaries. The fourth line (or closely-knitted line) is used primarily for drawing pickable windows.

Changing Views

To view images which are larger than a single screen, use the following keys to pan around.

- **Home**: Displays the image in its original position.
- **End**: Displays the extreme lower part of the image.
- **PgUp**: Moves the display down. The amount depends on what is currently visible.
- **PgDn**: Moves the display up. The amount depends on what is currently visible.
- **Arrows**: Moves the display left, right, up, or down one grid (8 pixels).

You can also use the **Go to** command from the **Edit** menu to view different parts of a graphic image. The hot-key associated with this function is **Ctrl-G**.

Keyboard Reference

Function Keys

The following table lists the menu commands that can be executed in Draw using function keys and function key combinations. For additional information about a particular command, refer to the appropriate menu command section.

Table 6-1: Function Keys

	F1	F2	F3	F4	F5	F6
key only		Edit-Draw	Edit-Move	Edit-Copy	Edit-Edit Variables	Edit-Delete Object
Alt + key				File-Exit	Edit-Edit Attributes	
Ctrl + key					Edit-Edit Shape	
Shift + key					Edit-Edit Selected	Edit-Delete Selected

	F7	F8	F9	F10	F11	F12
key only	Edit-Undo	Edit-Scale	Edit-Select Object	Edit-Deselect Object	Text-Horizontal	Reorder-Later
Alt + key					Text-Ascending	Reorder-First
Ctrl + key					Text-Descending	Reorder-Last
Shift + key		Scale-Selected	Select-Select All	Select-Deselect All	Text-Vertical	Reorder-Sooner

Additional Key Commands

The following table lists menu commands that can be executed in Draw using a keystroke or combination of keystrokes. For more information about a particular command, refer to the appropriate menu command section.

Table 6-2: Additional Key Commands

	G	M	P	R	S	+	-
key only	Options-Grid	Options-Magnetism		Options-Redraw		Layer-Move Up	Layer-Move Down
Ctrl + key	Edit-Go to		File-Print	File-Redraw	File-Save		

In addition, the following keys can be used to scroll through the graphic.

Page Up - moves the display down. The amount depends on what is currently visible.

Page Down - moves the display up. The amount depends on what is currently visible.

Home - displays the image in its original position.

End - displays the extreme lower part of the image.

↑, ↓, →, and ← - moves the display up, down, right or left one grid width (8 pixels).

The Draw Palette

Draw for Windows provides 128 colors plus variable color. The table below lists each color in the palette, the index number used when specifying the color as variable color, and the color's red, green and blue (RGB) decimal values. Figure 6-23 in the section **Variable Color** on page 6-44 lists each color's index number in the order they appear in the palette.

NOTE When using a graphic with versions of SiteScan 2000 for Windows below 2.5, the variable color index numbers listed in this table do not apply. Figure 6-24 in the section **Variable Color** on page 6-44 lists the index numbers for colors that are available as variable color in SiteScan 2000 for Windows version 2.0c and below.

Table 6-3: Palette of Colors in Draw V2.5 or higher

Color	Index	R	G	B	Color	Index	R	G	B
Very Light Red	65	255	000	000	Very Light Peach	125	252	128	112
Light Red	66	208	000	000	Light Peach	126	208	104	092
Medium Red	67	168	000	000	Medium Peach	127	168	084	072
Dark Red	68	124	000	000	Dark Peach	128	124	060	052
Very Dark Red	69	080	000	000	Very Dark Peach	129	080	040	036
Very Light Yellow	70	255	255	000	Very Light Brick	130	252	128	084
Light Yellow	71	208	208	000	Light Brick	131	208	104	068
Medium Yellow	7	168	168	000	Medium Brick	132	168	084	056
Dark Yellow	73	124	124	000	Dark Brick	133	124	060	040
Very Dark Yellow	74	080	080	000	Very Dark Brick	134	080	040	024
Very Light Green	75	000	255	000	Very Light Flesh	135	252	172	164
Light Green	76	000	208	000	Light Flesh	136	208	144	136
Medium Green	77	000	168	000	Medium Flesh	137	168	112	108
Dark Green	78	000	124	000	Dark Flesh	138	124	084	080
Very Dark Green	79	000	080	000	Very Dark Flesh	139	080	056	052
Very Light Cyan	80	000	255	255	Very Light Mustard	140	252	172	096
Light Cyan	81	000	208	208	Light Mustard	141	208	144	080
Medium Cyan	82	000	168	168	Medium Mustard	142	168	112	064

Table 6-3: Palette of Colors in Draw V2.5 or higher

Color	Index	R	G	B	Color	Index	R	G	B
Dark Cyan	83	000	124	124	Dark Mustard	143	124	084	048
Very Dark Cyan	84	000	080	080	Very Dark Mustard	144	080	056	032
Very Light Blue	85	000	000	255	Very Light Concrete	145	252	220	176
Light Blue	86	000	000	208	Light Concrete	146	208	184	144
Medium Blue	87	000	000	168	Medium Concrete	147	168	144	116
Dark Blue	88	000	000	124	Dark Concrete	148	124	108	084
Very Dark Blue	89	000	000	080	Very Dark Concrete	149	080	068	056
Very Light Purple	90	255	000	255	Very Light Creamwash	150	252	224	120
Light Purple	91	208	000	208	Light Creamwash	151	208	188	100
Medium Purple	92	168	000	168	Medium Creamwash	152	168	148	080
Dark Purple	93	124	000	124	Dark Creamwash	153	124	108	056
Very Dark Purple	94	080	000	080	Very Dark Creamwash	154	080	072	036
Very Light White	95	255	255	255	Very Light Cream	155	252	252	128
Light White	96	208	208	208	Light Cream	156	208	208	104
Medium White	97	168	168	168	Medium Cream	157	168	168	084
Dark White	98	124	124	124	Dark Cream	158	124	124	060
Very Dark White	99	080	080	080	Very Dark Cream	159	080	080	040
Very Light Orange	100	252	136	000	Very Light Lime	160	176	252	100
Light Orange	101	208	112	000	Light Lime	161	144	208	084
Medium Orange	102	168	088	000	Medium Lime	162	116	168	064
Dark Orange	103	124	064	000	Dark Lime	163	084	124	048
Very Dark Orange	104	080	040	000	Very Dark Lime	164	056	080	032
Very Light Leaf	105	136	252	000	Very Light Olive	165	128	252	128
Light Leaf	106	112	208	000	Light Olive	166	104	208	104
Medium Leaf	107	088	168	000	Medium Olive	167	084	168	084
Dark Leaf	108	064	124	000	Dark Olive	168	060	124	060
Very Dark Leaf	109	040	080	000	Very Dark Olive	169	040	080	040
Very Light Teal	110	000	252	136	Very Light Tealwash	170	124	252	196
Light Teal	111	000	208	112	Light Tealwash	171	100	208	160
Medium Teal	112	000	168	088	Medium Tealwash	172	080	168	128
Dark Teal	113	000	124	064	Dark Tealwash	173	060	124	096
Very Dark Teal	114	000	080	040	Very Dark Tealwash	174	040	080	060
Very Light Skyblue	115	000	136	252	Very Light Aqua	175	148	252	232

Table 6-3: Palette of Colors in Draw V2.5 or higher

Color	Index	R	G	B	Color	Index	R	G	B
Light Skyblue	116	000	112	208	Light Aqua	176	120	208	192
Medium Skyblue	117	000	088	168	Medium Aqua	177	096	168	152
Dark Skyblue	118	000	064	124	Dark Aqua	178	072	124	112
Very Dark Skyblue	119	000	040	080	Very Dark Aqua	179	044	080	072
Very Light Violet	120	136	000	252	Very Light Light Blue	180	148	188	252
Light Violet	121	112	000	208	Light Light Blue	181	120	156	208
Medium Violet	122	088	000	168	Medium Light Blue	182	096	124	168
Dark Violet	123	064	000	124	Dark Light Blue	183	072	092	124
Very Dark Violet	124	040	000	080	Very Dark Light Blue	184	044	060	080
VAR (variable color)	--				Very Light Lavender	185	188	152	252
BLACK (reserved)	64	000	000	000	Light Lavender	186	156	124	208
Black	192	000	000	000	Medium Lavender	187	124	100	168
Dark Grey	191	044	044	044	Dark Lavender	188	092	072	124
Grey	190	060	060	060	Very Dark Lavender	189	060	048	080

File Menu Commands

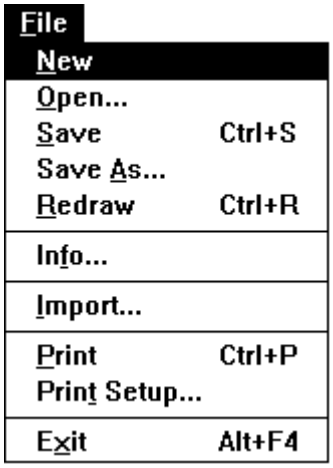


Figure 6-2: The File Menu

New

This command begins a new graphic image and clears the Drawing Area. If a file is already loaded and you have made any changes since it was last saved, a dialog box asks if you are sure. If you want to save the file before clearing the screen, answer NO and pick **Save** or **Save As** before clearing.

Open

This command loads a new file into Draw for Windows, using the new **.gfx** file format. Use the **File**, **Import** command to open **.bin** files created with the DOS-based version of Draw. Unless specified otherwise, files are loaded from the directory specified by the **DefFileOpenDir** command in the [DRAW] section of the **alc.ini** file (default is **c:\ss2000\xxx**).

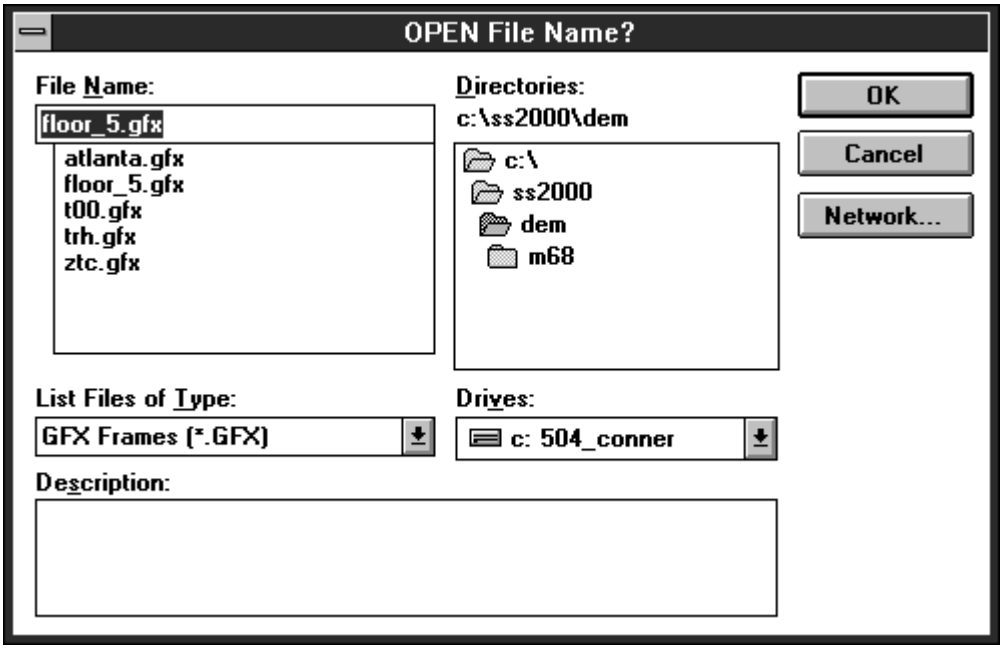


Figure 6-3: File Open

Save

This command saves a file using the **.gfx** file format (see note below). These graphics files can only be displayed in SiteScan 2000 for Windows V2.0 or later using a VGA-compatible monitor and graphics card. See the section **Minimum Hardware Requirements** on page 2-3 for more information. Unless specified otherwise, files are saved in the directory specified by the **DefFileOpenDir** command in the **alc.ini** file (default is **c:\ss2000\xxx**).

If you attempt to save a file which already exists, a dialog box appears which asks, "Are You Sure?" If the file was originally drawn using Draw for DOS, use the **Save As** command instead and use a **.gfx** file extension.

NOTE Graphics created using Draw for DOS have a file extension of **.bin** or **.pic**. The Number Nine graphics card used with Draw for DOS cannot display files saved in Draw for Windows. To avoid overwriting an old .**bin** or **.pic** file with the new format, *we strongly recommend that you make backups of your graphic files before loading them into Draw for Windows.*

Save As

This command saves a file using a different filename than the existing file. It uses the **.gfx** file format (see note below). These graphics files can only be displayed in SiteScan 2000 for Windows V2.0 or later using a VGA-compatible monitor and graphics card (see the section **Minimum Requirements** on page 2-3). Unless specified otherwise, files are saved in the directory specified by the **DefFileOpenDir** command in the **alc.ini** file (default is **c:\ss2000\xxx**).

If you attempt to save a file which already exists, a dialog box appears which asks, "Are You Sure?" If the file was originally drawn using Draw for DOS, use a **.gfx** file extension.

NOTE Graphics created using Draw for DOS have a file extension of **.bin** or **.pic**. The Number Nine graphics card used with Draw for DOS cannot display files saved in Draw for Windows. To avoid overwriting an old .**bin** or **.pic** file with the new format, *we strongly recommend that you make backups of your graphic files before loading them into Draw for Windows.*

The **Save File as Type** option allows you to save a file in a format that is compatible with earlier versions of Draw for Windows. Because of the changes introduced in Draw version 2.5, previous versions of Draw cannot edit graphics saved in the new version 2.5 format. In addition, graphics saved in the new format will not function properly with versions of SiteScan 2000 for Windows prior to 2.5. The **Save File as Type** option allows you to save a graphic file as a **Compatibility 1 Graphic** or as a **Compatibility 2 Graphic**.

The **Compatibility 1 Graphic** option saves the file so that it is compatible with versions of Draw for Windows prior to 2.5. ***However, any features in the graphic that are unique to Draw version 2.5 (such as fonts or bitmaps) will be lost if this option is chosen***. Fonts will be converted to the closest size using Draw's default **wafer** font. A file saved with this option is compatible with all versions of SiteScan 2000 for Windows.

The **Compatibility 2 Graphic** option saves the file so that it is only compatible with Draw and SiteScan 2000 for Windows versions 2.5 and later. ***Graphics saved using this option cannot be edited using Draw versions prior to 2.5.***

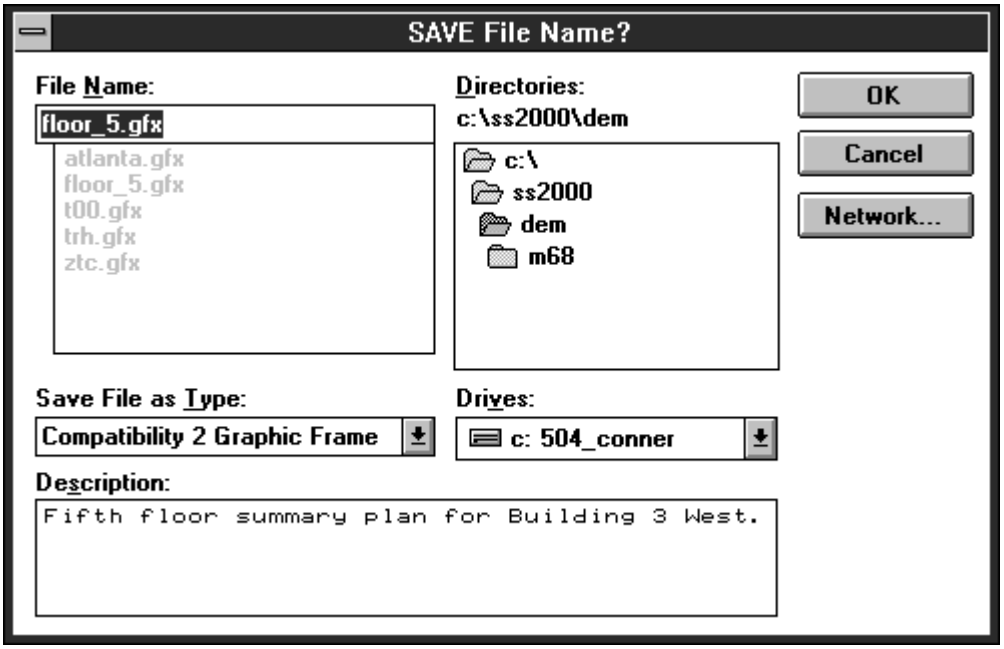


Figure 6-4: File Save

Redraw

This command repaints all of the objects on the screen starting with the lowest layer and ending with the highest layer. Objects in the same layer are repainted in the order that they were drawn. (The draw order within a layer can be changed by the Reorder menu commands.) You can also use the **Redraw** command to view objects within overlapping objects. Any superfluous pieces which occasionally appear when making edits are removed. Also see the **Redraw** feature in the **Options** menu on page 6-31. The hot key for this command is **Ctrl**+**R**.

Info

This option allows you to view information about the current file and to enter a description for the file. Select the **Info...** option from the File menu to display the File Info pop-up.

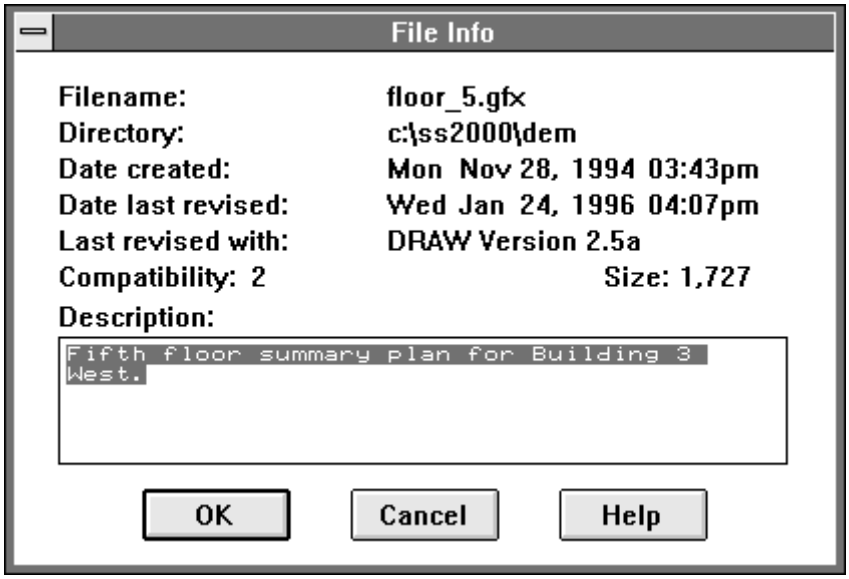


Figure 6-5: File Information

The File Info pop-up displays the file name, the directory the file is located in, and the date the file was created. The **Date last revised** indicates the date the file was last saved. The **Last revised with** field displays the version of Draw that this file was last revised in. If the file was revised in a version of Draw prior to version 2.5, the version number is listed as Unknown.

The **Compatibility** indicates this file's level of compatibility with SiteScan 2000 for Windows and other Liebert products. A compatibility level of 2 indicates that this file is only compatible with SiteScan 2000 for Windows version 2.5 or later. Files that are compatible with SiteScan 2000 for Windows versions prior to 2.5 are considered to have a compatibility level of 1. Compatibility 2 files can be saved in the Compatibility 1 format so that they may be used with SiteScan 2000 for Windows and Draw for Windows versions below 2.5, but any features in the graphic that are unique to Draw version 2.5 will be lost. See the section **Save As** on page 6-11 for more information about saving files in different compatibility formats.

The **Size** indicates the size of the file on the disk in bytes. The **Description** box is a free-form text field that can be used to enter any descriptive text for this file, up to a maximum of 255 characters. This description can be viewed, but not edited, on the File Open and File Save As pop-ups. Select **OK** to exit the pop-up and save changes, or select **Cancel** to exit without saving.

NOTE When using the **File-Info...** option for the first time with a file that was created with an earlier version of Draw, a Compatibility Warning will appear. This warning tells you that this feature is not available for this file unless you upgrade the file's compatibility. If you select **Yes** to upgrade the compatibility of the file, the graphic will no longer function properly with SiteScan 2000 for Windows versions prior to 2.5. If you select **No**, the **File-Info...** operation will be aborted and the file will not be upgraded. In order to use an upgraded graphic with versions of Draw or SiteScan 2000 for Windows below 2.5, you must save the file as a Compatibility 1 Graphic using the **File-Save As** option. See the section **Save As** on page 6-11 for more information about file compatibility.

Import

This command loads into Draw for Windows an existing **.bin** file created with the DOS-based version of Draw. Unless specified otherwise, files are loaded from the directory specified by the **DefFileOpenDir** command in the [DRAW] section of the **alc.ini** file (default is **c:\ss2000\xxx**). Use the **File**, **Save** or the **File**, **Save As** command to save the file using the **.gfx** file format.

Because Draw for Windows does not support multiple drawing modes, files created in Draw for DOS containing Variable Color, Stacked Text (i.e., open/closed, normal/alarm, dty/cln) must be edited before being saved in Draw for Windows. See the section **The Variable Text Function** on page 6-49 for more information.

NOTE If a packed symbol is detected during an import operation, the import is aborted. Unpack any packed symbols in the DOS-based version of Draw before attempting to import the file into Draw for Windows.

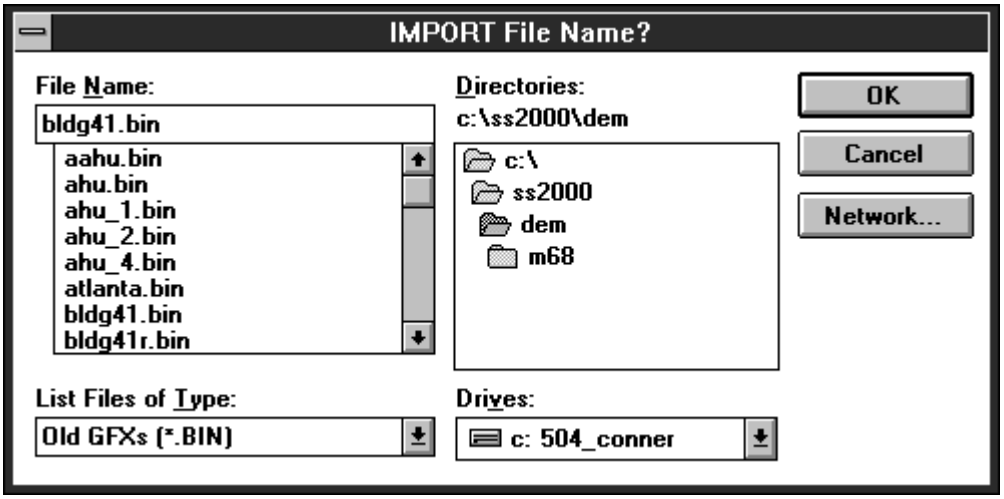


Figure 6-6: File Import

Print

This command prints the drawing displayed on the screen to the selected printer (see section **Print Setup** on page 6-16), to a bitmap file (file extension **.bmp**), or to a Windows Metafile (file extension **.wmf**). Bitmap files and Metafiles can be easily imported into many other Windows applications. Always save your drawing before using **Print**.

Draw for Windows uses the entire page when printing and centers the image horizontally. For tractor-feed printers, Draw for Windows prints across page boundaries without leaving a gap. In addition, the Figures Menu is temporarily turned off during printing.

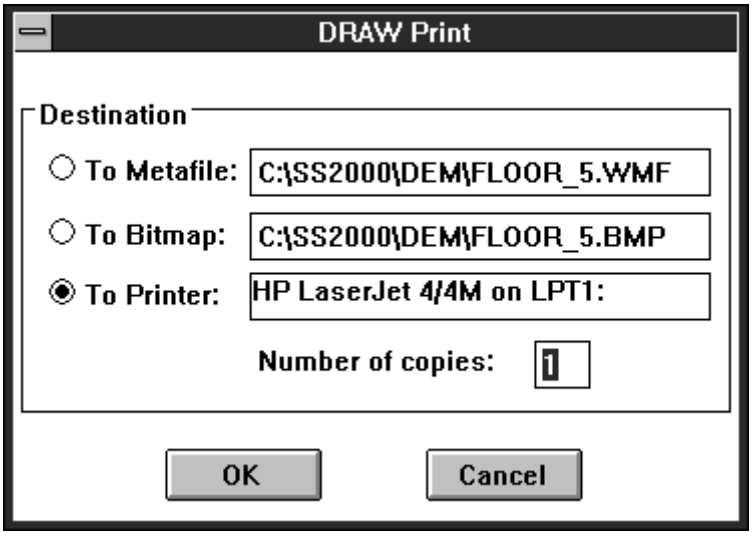


Figure 6-7: File Print

Print Setup

This command allows you to select a printer from the list of installed printers (which are installed in the Windows Control Panel). It also allows you to access the Setup page for the selected printer in order to configure the desired printing options.

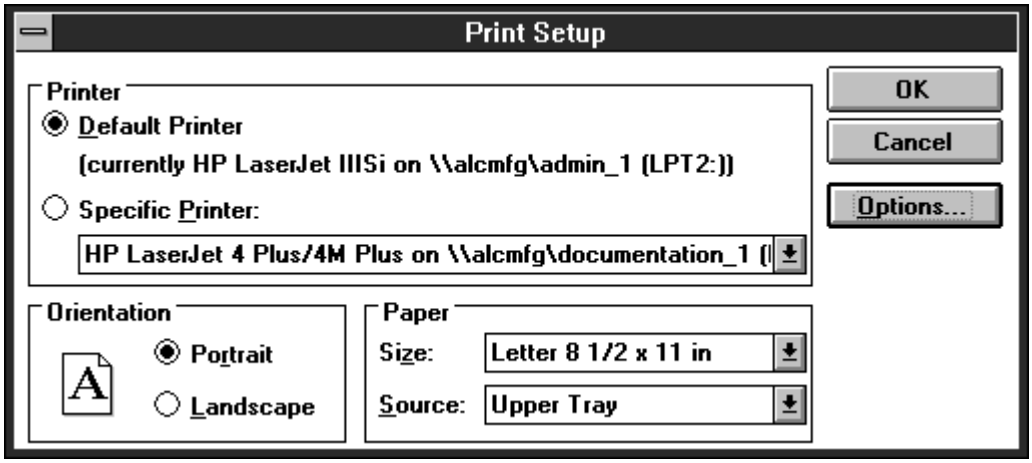


Figure 6-8: Print Setup

Exit

This command exits from Draw for Windows. If you have made any changes since the file was last saved, a dialog box asks if you want to save the changes. Pick **Yes** or **No**, as appropriate, or **Cancel** to return to the drawing. Picking **Yes** causes the **Save** dialog box to appear.

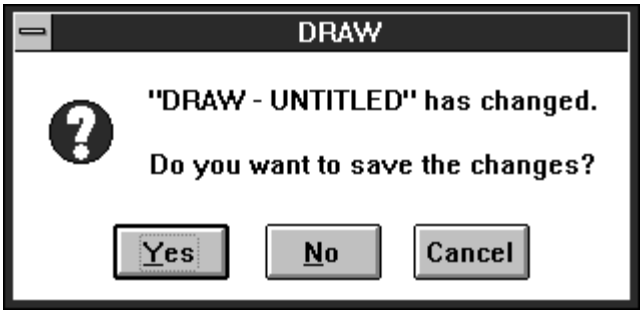


Figure 6-9: File Exit

Edit Menu Commands

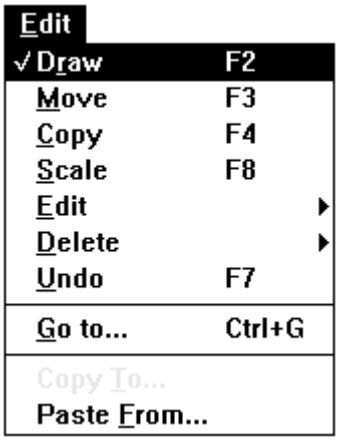


Figure 6-10: Edit Menu

This menu contains all of the commands which have to do with editing drawings. Some of the commands in this menu have sub-menus which contain various options. The last **Edit** menu command executed remains active and can be used several times.

Draw

This command creates objects on the screen in the selected color. If the object requires user-defined data (such as text input), a dialog box appears after the object is drawn. The **Draw** command is automatically selected when one of the items from the **Figure Menu** is selected by the user. The hot-key for this command is **F2**.

- The **foreground** color is selected with the left mouse button.
- The **background** color is selected with the right mouse button. The background color defaults to solid black if one is not selected. Background colors are visible only for broken lines, text, and fill patterns.

NOTE Always select the proper layer before drawing an object. See the section **The Layer Command** on page 6-33 for more information.

Move

This command moves individual or multiple objects to different positions on the screen. The hot-key for this command is **F3**.

To move individual figures

1. Pick **Move** from the **Edit** menu.
2. Position the cursor within the borders of the object to be moved.
3. Hold down the left mouse button and drag the object to the new position.
4. Release the left mouse button to leave the object in the new location, or press the **Escape** key to abort.

To move multiple figures

1. Select each object to be moved (see the section **Selection Menu Commands** on page 6-25).
2. Pick **Move** from the **Edit** menu.
3. Position the cursor anywhere in the Drawing Area.
4. Hold down the right mouse button and drag the objects to the new position. The objects will move relative to the position of the cursor.
5. Release the right mouse button to leave the objects in the new location, or press the **Escape** key to abort.

Copy

This command copies individual or multiple objects. This command is internal to Draw for Windows and does not use the Windows Clipboard. The hot-key for this command is **F4**.

To copy individual figures

1. Pick **Copy** from the **Edit** menu.
2. Position the cursor within the borders of the object to be copied.
3. Hold down the left mouse button and drag the copied object to the new position.
4. Release the left mouse button to leave the object in the new location, or press the **Escape** key to abort.

To copy multiple figures

1. Select each object to be copied (see the section **Selection Menu Commands** on page 6-25).
2. Pick **Copy** from the **Edit** menu.
3. Position the cursor anywhere in the Drawing Area.
4. Hold down the right mouse button and drag the copied objects to the new position. The objects will move relative to the position of the cursor.
5. Release the right mouse button to leave the objects in the new location, or press the **Escape** key to abort.

Scale

This command is used to change the size of an object and to rotate an object. The width (X-axis) and height (Y-axis) of most figures can be adjusted independently. However, text cannot be scaled at all, and a bitmap image in a graphic cannot be scaled, rotated, or re-shaped.

The minimum and maximum range of scaling is from zero percent to approximately 32,000 percent. If a figure is scaled beyond this range, the computer may lock up. Also, if a figure is scaled up or down over 90 percent of its original size, it may not be possible to scale the figure back.

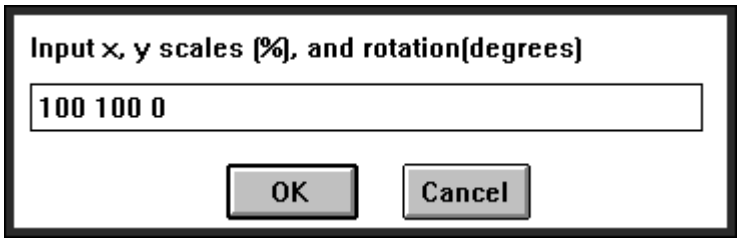


Figure 6-11: Edit Scale

To Scale one or more objects

1. Select the **Scale** command from the **Edit** menu. The Scale pop-up will appear.
2. Enter the X-axis and Y-axis in percent. A negative percentage means the object will be reversed or mirrored about the X-axis and/or the Y-axis. Enter the desired rotation in degrees. Press **OK** to continue or **Cancel** to abort.
3. Position the cursor on the object to be scaled and click the left mouse button. Repeat this step to scale multiple figures

using the same settings.

OR

Use the right mouse button to drag a window around the origins of the objects to be scaled, then release the button.

Edit

This command edits individual or multiple objects. The **Edit** command can change the following:

- **Attributes** -- color, pattern, line style, text font or direction of one object.
- **Selected** -- attributes of one or more objects.
- **Shape** -- polygon or line borders, input for text and variable text.
- **Variables** -- variable color input, pickable window code.

Each of these edit functions remain enabled and can be used multiple times. The hot-keys for the edit functions are associated with **F5**.

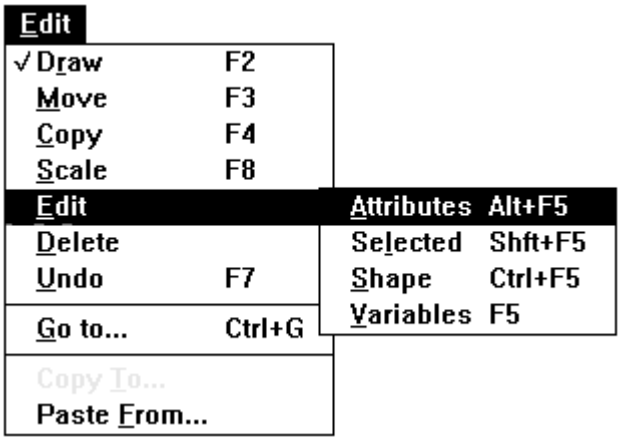


Figure 6-12: Edit Sub-menu

To edit the attributes of an object

1. Pick **Edit** from the **Edit** menu.
2. Pick **Attributes** from the sub-menu.
3. Pick the object to be edited.
4. Pick the desired attribute (color, pattern, line style, text font or direction).
5. Repeat steps 1-4 for multiple objects.

To edit attributes for multiple objects at the same time

1. Select the objects to be edited.
2. Pick **Edit** from the **Edit** menu.
3. Pick **Selected** from the sub-menu.
4. Pick the desired options (color, pattern, line style, text font or direction).

To edit the shape of an object

1. Pick **Edit** from the **Edit** menu.
2. Pick **Shape** from the sub-menu.
3. Position the cursor within the borders of the object to be edited.
4. For these objects, do the following:
   - **polygon** -- hold down the left mouse button and drag the object's outline to the desired shape. Release the left mouse button to accept the new shape, or press the **Escape** key to abort. To remove previous vertices, hold the left mouse button and press the **Backspace** key.
   - **line** -- hold down the left mouse button and click the right mouse button where you want the line to change direction. Release the left mouse button to accept the new shape, or press the **Escape** key to abort. To remove previous vertices, hold the left mouse button and press the **Backspace** key.
   - **text** -- enter the desired text in the pop-up dialog box. Press **OK** to accept the new text, or press the **Escape** key to abort.

To edit an object's variables

1. Pick **Edit** from the **Edit** menu.
2. Pick **Variables** from the sub-menu.
3. Position the cursor within the borders of the object to be edited and press the left mouse button; a dialog box should appear.
4. For these objects, do the following:
   - **pickable window** -- enter the window function command (see the section **The Pickable Window Function** on page 6-47), or press the **Escape** key to abort.

- **variable color** -- enter the variable color input command (see the section **Variable Color** on page 6-44), or press the **Escape** key to abort.

Delete

This command removes individual or multiple objects. The hot-keys for the delete functions are associated with **F6**.

To delete an individual object

1. Pick **Delete** from the **Edit** menu.
2. Pick **Object** from the **Delete** sub-menu.
3. Position the cursor within the object to be deleted.
4. Press the left mouse button to delete the object.

To delete multiple objects

1. **Select** the objects to be deleted.
2. Pick **Delete** from the **Edit** menu.
3. Pick **Selected** from the **Delete** sub-menu. The selected objects will be deleted.

   OR

1. Pick **Delete** from the **Edit** menu.
2. Pick **Object** from the **Delete** sub-menu.
3. Press the right mouse button to drag a window around the desired objects. All of the surrounded objects whose origins are enclosed within the window will be deleted.

Undo

This command reverses the action of the last executable command. For example if a line is accidentally deleted from a drawing, it can be restored using this command.

Go to

This command views different parts of a graphic image. The hot-key associated with this function is **Ctrl-G**.

Copy to

This command stores the items selected on the screen as a symbol using the file extension **.sym**. Symbols can be retrieved using the **Paste from** command. Draw for Windows symbols cannot be loaded into Draw for DOS.

Likewise, symbols created in Draw for DOS cannot be loaded directly into Draw for Windows. To transfer an older symbol into Draw for Windows, load the symbol into Draw for DOS, **Unpack** it, and **Save** it as a **.bin** file. Next, **Import** the **.bin** file into Draw for Windows and **Save** it as a **.gfx** file, or issue the **Edit-Copy to** command to save it as a symbol with a **.sym** extension.

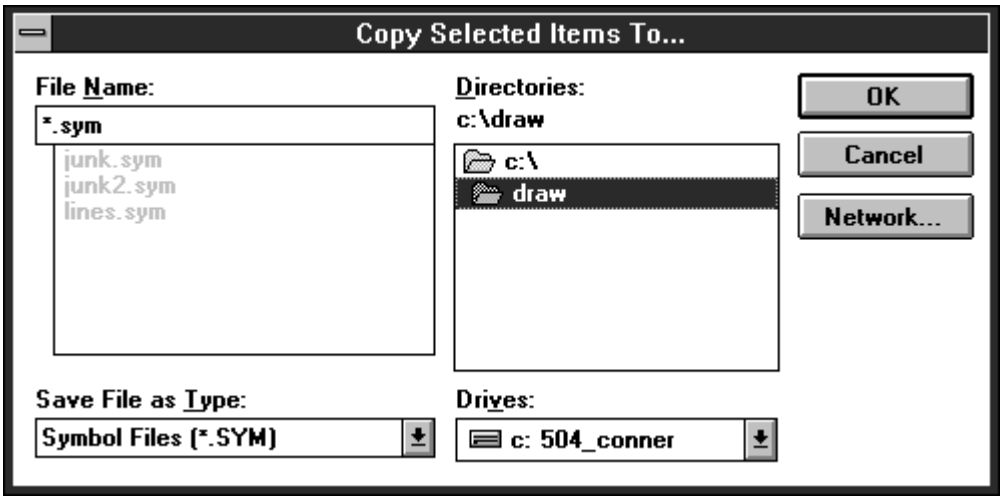


Figure 6-13: Copy To

Paste from

This command places a symbol into the drawing area in unpacked format. Symbols can be saved using the **Copy to** command. Symbols are stored using the **.sym** file extension.

Symbols created in Draw for DOS cannot be loaded directly into Draw for Windows. To transfer an older symbol into Draw for Windows, load the symbol into Draw for DOS, **Unpack** it, and **Save** it as a **.bin** file. Next, **Import** the **.bin** file into Draw for Windows and **Save** it as a **.gfx** file, or issue the **Edit-Copy to** command to save it as a symbol with a **.sym** extension.

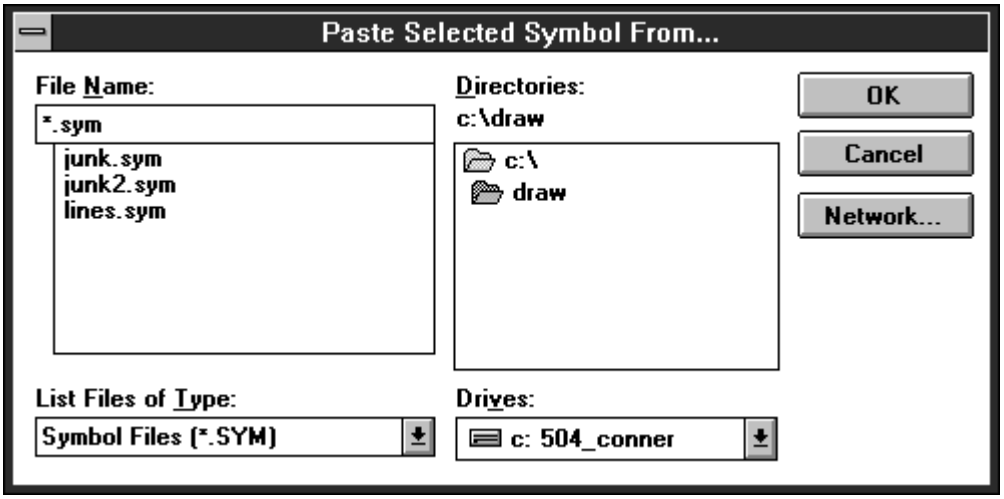


Figure 6-14: Paste From

Selection Menu Commands

This menu contains the commands which have to do with selecting or deselecting objects. Use this menu to identify or hide the origins of individual or multiple objects.

Select

Every object has an **origin** which is used to select the object. For most objects the origin is the starting point. For text objects, the origin is located on the left side of the baseline. When an object is selected, the origin appears as a small white box. The hot-keys for the Select functions are associated with **F9**.

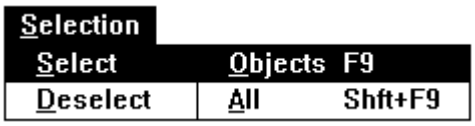


Figure 6-15: Selection Menu

To select one or more objects

1. Pick **Select** from the **Selection** menu.
2. Pick **Objects** from the **Select** sub-menu.
3. Position the cursor within the borders of the object(s) to be selected.
4. Press the left mouse button to select the object.

   OR

1. Pick **Select** from the **Selection** menu.
2. Pick **Objects** from the **Select** sub-menu.
3. Hold the right mouse button to drag a window around the desired objects, then release the button. All of the surrounded objects will be selected.

To select all objects

1. Pick **Select** from the **Selection** menu.
2. Pick **All** from the **Selection** sub-menu. All objects will be selected.

Deselect

When an object is deselected, the object's origin disappears. The hot-keys for the Deselect functions are associated with **F10**.

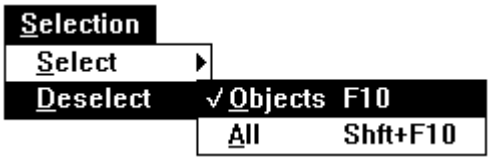


Figure 6-16: Deselection Menu

To deselect one or more objects

1. Pick **Deselect** from the **Selection** menu.
2. Pick **Objects** from the **Deselect** sub-menu.
3. Position the cursor within the borders of the object(s) to be deselected.
4. Press the left mouse button to deselect the object.

OR

1. Pick **Deselect** from the **Selection** menu.
2. Pick **Objects** from the **Deselect** sub-menu.
3. Hold the right mouse button to drag a window around the desired objects, then release the button. All of the surrounded objects will be deselected.

To deselect all objects

1. Pick **Deselect** in the **Selection** menu.
2. Pick **All** from the **Deselect** sub-menu. All of the selected objects will be deselected.

Text Menu Commands

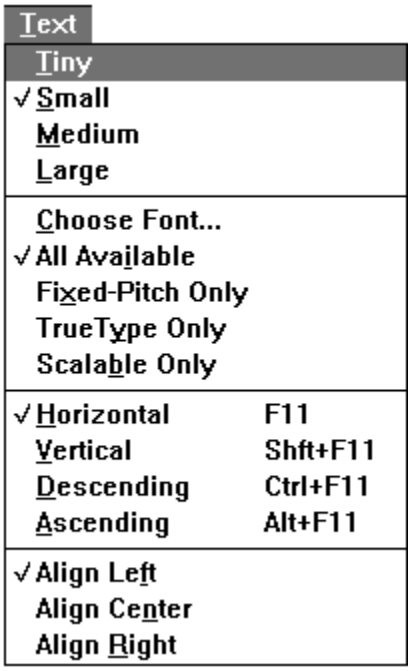


Figure 6-17: The Text Menu

This menu contains all of the commands which have to do with text font and direction. Draw supports all fonts installed through Windows Control Panel. The **Choose Font...** option displays the standard Windows Font dialog box. The fonts that are displayed in this dialog depend on whether the **All Available**, **Fixed-Pitch Only**, **TrueType Only** or **Scalable Only** options are selected.

NOTE When attempting to use the **Choose Font...** option for the first time with a file that was created with an earlier version of Draw for Windows, a Compatibility Warning will appear. This warning tells you that this feature is not available for this file unless you upgrade the file's compatibility. If you select **Yes** to upgrade the compatibility of a graphic file, the graphic can not be edited with versions of Draw prior to 2.5 and will not function properly with versions of SiteScan 2000 for Windows prior to 2.5. If you select **No**, the **Choose Font...** operation will be aborted and the file will not be upgraded. In order to use an upgraded graphic file with versions of Draw or SiteScan 2000 for Windows below 2.5, you must save the file as a Compatibility 1 Graphic using the **File-Save As** option. See the section **Save As** on page 6-11 for more information about file compatibility.

The hot-keys for the text Direction functions are associated with **F11**.

- When the **Horizontal** direction is selected, text flows from left to right.
- When the **Vertical** direction is selected, text flows from top to bottom.
- When the **Ascending** direction is selected, text flows from lower left to upper right.
- When the **Descending** direction is selected, text flows from upper left to lower right.

The Alignment options (**Align Left**, **Align Center**, and **Align Right**) align the text to the left, center or right of the cursor. These options are only available for horizontal text.

The origin for text objects is located at the left side of the baseline.

To set the text attributes before text is drawn

1. Pick **Fonts** from the **Text** menu; pick the desired font from the sub-menu.
2. Pick **Direction** from the **Text** menu; pick the desired direction from the sub-menu.
3. Pick the desired color from the palette.
4. Pick the "**Abc**" icon from the **Figure Menu**.
5. Position the cursor within the Drawing Area where the text is to appear.
6. Draw the text by typing it into the keyboard. Press the **Enter** key when finished.

To set the text attributes after text is drawn

1. Pick **Edit** from the **Edit** menu.
2. Pick **Attributes** from the sub-menu.
3. Pick the text to be edited.
4. Pick the desired attribute (color, text font or direction).
5. Repeat steps 1-4 for multiple text objects.
6. Pick the desired color from the palette.

Reorder Menu Commands

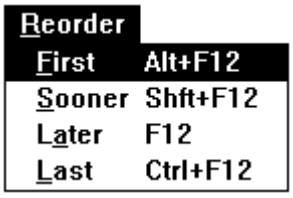


Figure 6-18: The Reorder Menu

This menu contains all of the commands which have to do with changing the draw order of objects in the Drawing Area. The hot-keys for the Reorder functions are associated with **F12**.

NOTE The Reorder commands are only applicable to objects drawn in the same layer. These commands do NOT move objects to other layers.

First

This command moves an object **below** the **lowest** object, or the one which was drawn first. For example, if you have three objects, you can use this command to move the last object that was drawn below the first one drawn.

Sooner

This command moves an object **below** the **next lower** object. For example, if you have three objects, you can use this command to move the first object that was drawn below the second one drawn.

Later

This command moves an object **above** the **next higher** object. For example, if you have three objects, you can use this command to move the last object that was drawn above the second one drawn.

Last

This command moves an object **above** the **highest** object, or the one which was drawn last. For example, if you have three objects, you can use this command to move the first object that was drawn above the last one drawn.

Options Menu Commands

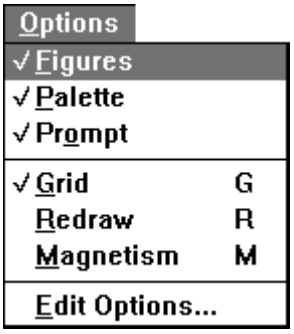


Figure 6-19: The Options Menu

This menu contains all of the options which have to do with enabling/ disabling certain features of Draw for Windows. A feature is enabled when a check mark is placed next to the appropriate menu item.

Figures

This command enables or disables the Figure menu which is located on the right side of the Drawing Area.

Palette

This command enables or disables the color menu which is located at the bottom of the Drawing Area.

Prompt

This command enables or disables the blue Status bar which is located at the extreme bottom of the Drawing Area.

Grid

This command enables or disables the Grid, which is a pattern of uniformly spaced dots used to assist with the layout of a drawing. There are eight drawing pixels between two adjacent horizontal or vertical dots. The grid is not considered a part of a drawing and it is not saved in the drawing file. The Grid can be enabled/disabled by pressing the **G** key.

Redraw

This command enables or disables the Redraw feature, which automatically redraws the screen when an object is drawn, or when an Edit menu command is issued, or when the active layer is changed. The screen can also be redrawn manually using the **Redraw** command in the **File** menu. The Redraw feature can be enabled/disabled using the **R** key.

Magnetism

This command enables or disables the Magnetism feature, which automatically positions objects in the Drawing Area to the grid points (whether or not the grid is enabled). Magnetism can be enabled/disabled by pressing the **M** key.

Edit Options

This command allows you to change settings in the **alc.ini** file which affect the operation of Draw for Windows. Some of these same settings can be changed in the INI Configuration Manager. See the section **The Draw Tab** on page 5-34 for more information.

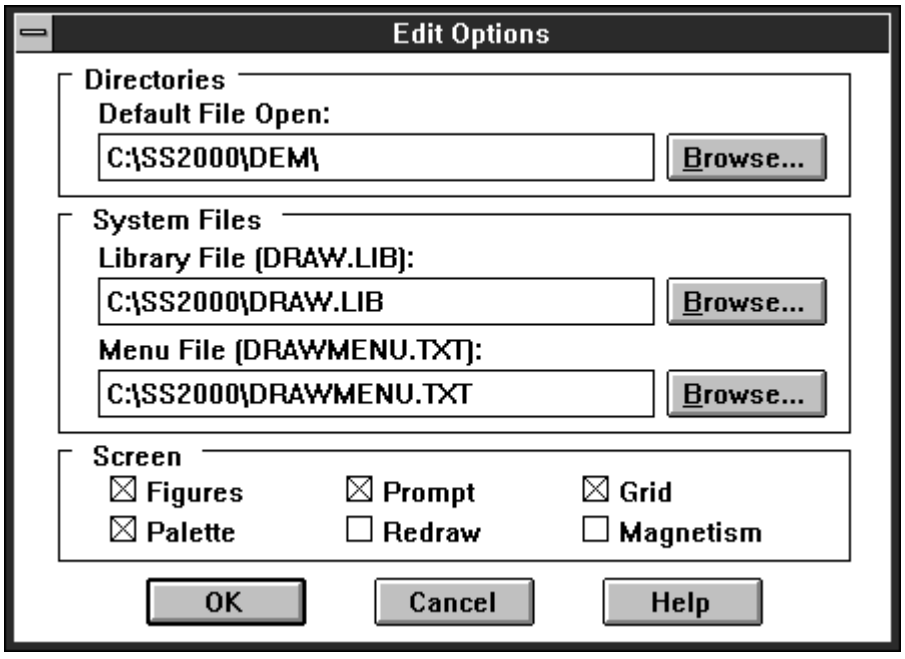


Figure 6-20: Edit Options

- **Default File Open** This field defines the default directory which Draw for Windows initially points to when opening or saving a file (**.gfx** files).
- **Library File** This field locates the **draw.lib** file, which defines internal symbols used by Draw for Windows.
- **Menu File** This field locates **drawmenu.txt** file, which defines menu bar definitions for the Draw for Windows screen.

The **Screen** section indicates the display options that are currently enabled for Draw for Windows. Changing these options has the same effect as changing the corresponding options on the **Options** menu.

The Layer Command

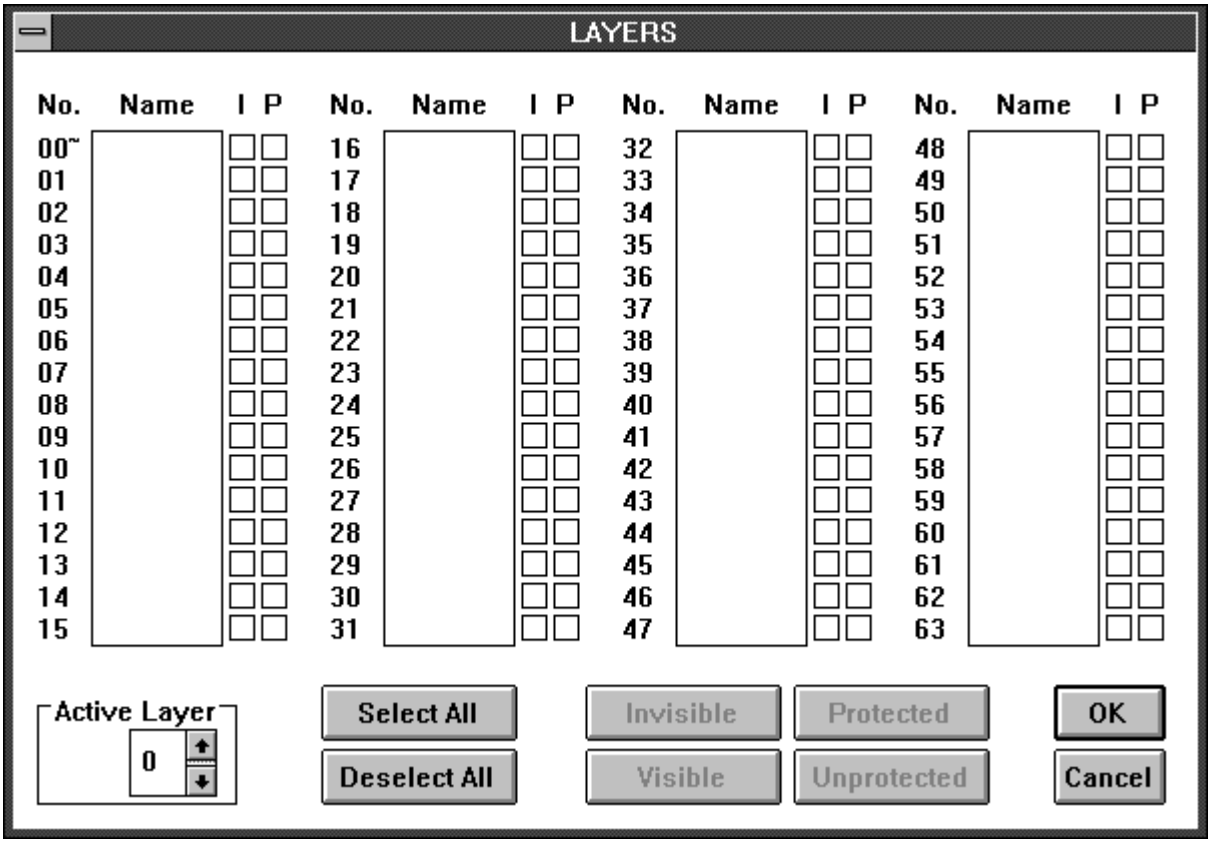


Figure 6-21: Layer Dialog Box

This command displays the Layer dialog box, which is used to determine the status of a layer, select a layer, and assign attributes to a layer. A drawing can consist of figures and text in up to 64 different layers. Only one layer at a time is active for drawing and is indicated on the Status line at the bottom of the screen. Layers are numbered from 00 to 63.

To easily change layers when the Layers dialog box is closed, press the "**+**" key on the numeric keypad to move up a layer, or press the "**-**" key to move down a layer.

Selecting the correct layer before drawing an object is important because of the way in which SiteScan 2000 for Windows paints a graphic screen. When a graphic is displayed in SiteScan 2000 for Windows all the layers are drawn in sequence. Later, when a layer is refreshed (because of Variable text or Variable color), all of the objects

in that layer are redrawn. Because the other layers in the drawing may not have been refreshed, objects in the newly refreshed layer may cover up objects in the other layers. In essence, objects can "disappear". Avoid drawing static objects and variable objects in the same layer.

We recommend drawing each Variable color or Variable text object in a unique layer if possible. This method allows SiteScan 2000 for Windows to refresh individual objects when necessary without refreshing multiple objects, some of which may not need refreshing. Multiple variable objects should only be drawn in the same layer when more layers are needed than are available.

The following layering standards are recommended:

- **Layers 00-04** Contains all static elements (i.e., gray & white text, extension lines, degrees F, meters, north arrow). We do not recommend drawing variable colors or variable text in these layers. This will avoid redraw problems in SiteScan 2000 for Windows.
- **Layers 05-45** Contains all variable colors. These colors change according to input information. If possible, each variable color object should be drawn in a separate layer.
- **Layers 46-61** Contains all variable text. These characters change according to input information. If possible, each variable text object should be drawn in a separate layer.
- **Layer 62** Contains all pickable windows. These windows determine what to display when they are picked.
- **Layer 63** Contains all elements that are continually redrawn (i.e., zone outlines, text over variable colors, interior walls over variable colors, temp sensors, extension lines crossing over variable colors). No variable colors are permitted here.

The Layers dialog box

To access the Layers dialog box, pick **Layers** from the main menu. The active layer is selectable at the lower left. Layers which have objects in them are indicated by a tilde (~) next to the layer number.

Each layer can be named by double-clicking in the **Name** field. Names can be up to 8 characters long and may consist of any character on the keyboard.

Invisible Layers

Each layer (except the active layer) can be made invisible, which means that all of the figures in that layer will not appear. Invisible layers cannot be edited in any way. Making layers invisible is a good way of isolating objects so they can be edited without affecting nearby objects in other layers. To make a layer invisible, use one of the following methods:

- Pick the box in the "**I**" column for each layer to be made invisible. The invisible layers are indicated with X's in the "**I**" columns.
- Select each layer to be made invisible by picking its "**Name**" field. Then pick the **Invisible** button at the bottom of the dialog box. The invisible layers are indicated with X's in the "**I**" columns.

Protected Layers

Each layer (except the active layer) can be protected, which means that all of the figures in that layer may not be deleted. To protect a layer, use one of the following methods:

- Pick the box in the "**P**" column for each layer to be protected. The protected layers are indicated with X's in the "**P**" columns.
- Select each layer to be made protected by picking its "**Name**" field. Then pick the **Protected** button at the bottom of the dialog box. The protected layers are indicated with X's in the "**P**" columns.

Active Layer

The active layer is the one that is displayed on the drawing area when the Layers dialog box is closed. The active layer cannot be made invisible or protected. To change the active layer, pick the up or down arrows on the dialog box, or press the **+** and **-** keys on the keyboard when the Layers dialog box is closed.

To change the layer of a figure

1. Pick **Layers** from the main menu. The Layers dialog box will appear. Change the active layer using the up or down arrows at the lower left, then pick **OK** to enter the change.

OR

Press the "**+**" key on the keyboard to move up a layer, or press the "**-**" key to move down a layer.

2. Select the origin(s) of the desired figure(s).
3. Copy the figure(s) away from the original figure(s).
4. Delete the old figure(s). The new figure(s) will be in the new layer and can be moved anywhere in the drawing.

Help Menu Commands

This menu contains the commands for accessing Draw for Windows's online Help facility and for displaying the Draw for Windows **About** dialog box.

Index

This command is used to access Draw for Windows's online Help facility. Individual topics may be accessed by selecting the appropriate entry from the help index. For more information on using Windows online Help, press **F1** twice.

About Draw for Windows

This commands displays the Draw for Windows dialog box which shows the software version and copyright information.

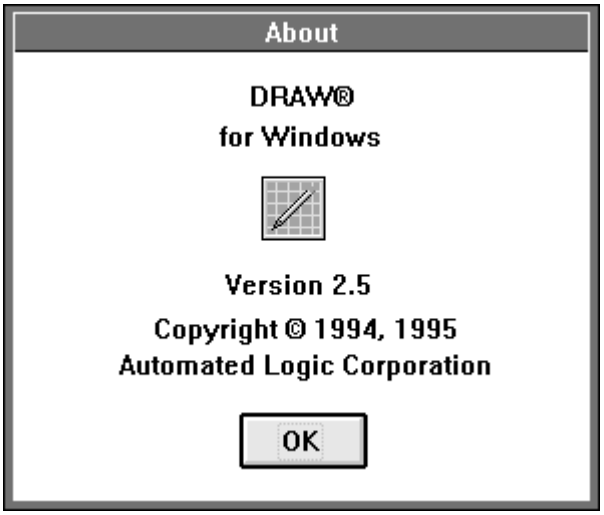


Figure 6-22: About Draw

How to draw objects

NOTE Always select the proper layer before drawing an object. See the section **The Layer Command** on page 6-33 for more information.

Line

1. Select the Line figure from the Figure Menu using either mouse button. The Line figure will be enclosed with a white box and **Draw** will be checked in the **Edit** Menu.
2. Select the desired line style from the area below the Figure Menu. The selected line style will be enclosed with a white box.
3. Select a foreground color in the Palette with the left mouse button and a background color with the right mouse button. A background color is required for lines and hollow objects having a line type other than a solid line.
4. Position the cursor in the Drawing Area and hold down the left mouse button to mark the origin (starting point) of the line.
5. Move the cursor to the ending point and release the mouse button to form a line or press **Esc** to abort this function.

NOTE If a multidirectional line is desired, start the line with the left mouse button and hold the left mouse button down. Click the right mouse button to establish each directional change. Release the left mouse button at the end of the line. The backspace key can cancel line segments starting with the last one if the left mouse button has not been released. Up to 14 directional changes can be made in any line.

Hollow Square/Rectangle

1. Select the Hollow Rectangle figure from the Figure Menu using either mouse button. The Hollow Rectangle figure will be enclosed with a white box and **Draw** will be checked in the **Edit** Menu.
2. Select the desired line style from the area below the Figure Menu. The selected line style will be enclosed with a white box.
3. Select a foreground color in the Palette with the left mouse button and a background color with the right mouse button. A background color is required for lines and hollow objects having

a line type other than a solid line.

4. Position the cursor in the Drawing Area and hold down the left mouse button to mark the origin (starting point) of the object.
5. Move the cursor to the opposite corner of the rectangle and release the mouse button to draw the object or press **Esc** to abort this function.

Hollow Circle

1. Select the Hollow Circle figure from the Figure Menu using either mouse button. The Hollow Circle figure will be enclosed with a white box and **Draw** will be checked in the **Edit** Menu.
2. Select the desired line style from the area below the Figure Menu. The selected line style will be enclosed with a white box.
3. Select a foreground color in the Palette with the left mouse button and a background color with the right mouse button. A background color is required for lines and hollow objects having a line type other than a solid line.
4. Position the cursor in the Drawing Area at the center of the desired circle and hold down the left mouse button to mark the origin of the object.
5. Move the cursor away from the starting point to form a circle of the desired size. Release the left mouse button to draw the figure or press **Esc** to abort this function.

Hollow Ellipse

1. Select the Hollow Circle figure from the Figure Menu using either mouse button. The Hollow Circle figure will be enclosed with a white box and **Draw** will be checked in the **Edit** Menu.
2. Select the desired line style from the area below the Figure Menu. The selected line style will be enclosed with a white box.
3. Select a foreground color in the Palette with the left mouse button and a background color with the right mouse button. A background color is required for lines and hollow objects having a line type other than a solid line.
4. Position the cursor in the Drawing Area at the center of the desired ellipse and hold down the left mouse button to mark the origin of the object.
5. Move the cursor outward to form a circle of the desired horizontal dimension.
6. While still holding the left mouse button down, click and release the right mouse button and move the cursor up/down or left/right until the desired ellipse has been formed. (This takes some practice to determine how to form an ellipse of the proper size

and orientation.)

7. Release the left mouse button to draw the figure, or press **Esc** to abort this function.
8. If necessary, use the **Scale** command to rotate the ellipse.

Arc

1. Select the Arc figure from the Figure Menu using either mouse button. The Arc figure will be enclosed with a white box and **Draw** will be checked in the **Edit** Menu.
2. Select the desired line style from the area below the Figure Menu. The selected line style will be enclosed with a white box.
3. Select a foreground color in the Palette with the left mouse button and a background color with the right mouse button. A background color is required for lines and hollow objects having a line type other than a solid line.
4. Position the cursor in the Drawing Area at the center of the desired arc and hold down the left mouse button to mark the origin of the object.
5. Move the cursor away from the starting point to form a circle of the desired radius with the cursor located at one end of the arc.
6. While still holding the left mouse button down, click the right mouse button and move the cursor clockwise or counter-clockwise until the desired arc has been formed.
7. Release the left mouse button to draw the figure or press **Esc** to abort this function.

Dots

1. Select the Dots figure from the Figure Menu using either mouse button. The Dots figure will be enclosed with a white box and **Draw** will be checked in the **Edit** Menu. The line style does not matter.
2. Select a foreground color in the Palette with the left mouse button. The background color does not matter.
3. Position the cursor in the Drawing Area and click the left mouse button to draw a dot Each dot is a separate figure with its own origin.

Text

1. Select the Abc figure from the Figure Menu using either mouse button. The Abc figure will be enclosed with a white box and **Draw** will be checked in the **Edit** Menu.

2. Select a foreground color in the Palette with the left mouse button and a background color with the right mouse button. The default background color is transparent black.
3. Select the text fonts and direction using the **Text** menu commands.
4. Position the cursor in the Drawing Area to establish the position for the first character of text. This point marks the origin of the text. A pop-up dialog box appears.
5. Type the desired text using the keyboard.
6. Press **OK** to draw the text or press **Esc** to abort this function.

Solid Square/Rectangle

1. Select the Solid Rectangle figure from the Figure Menu using either mouse button. The Solid Rectangle figure will be enclosed with a white box and **Draw** will be checked in the **Edit** Menu.
2. Select the desired pattern from the area below the Palette. The selected pattern will be enclosed with a white box.
3. Select a foreground color in the Palette with the left mouse button and a background color with the right mouse button. A background color is required for solid objects with a pattern.
4. Position the cursor in the Drawing Area and hold down the left mouse button to mark the origin (starting point) of the object.
5. Move the cursor to the opposite corner of the rectangle and release the mouse button to draw the object or press **Esc** to abort this function.

Solid Circle

1. Select the Solid Circle figure from the Figure Menu using either mouse button. The Solid Circle figure will be enclosed with a white box and **Draw** will be checked in the **Edit** Menu.
2. Select the desired pattern from the area below the Palette. The selected pattern will be enclosed with a white box.
3. Select a foreground color in the Palette with the left mouse button and a background color with the right mouse button. A background color is required for solid objects with a pattern.
4. Position the cursor in the Drawing Area at the center of the desired circle and hold down the left mouse button to mark the origin of the object.
5. Move the cursor away from the starting point to form a circle of the desired size. Release the left mouse button to draw the figure or press **Esc** to abort this function.

Solid Ellipse

1. Select the Solid Circle figure from the Figure Menu using either mouse button. The Solid Circle figure will be enclosed with a white box and **Draw** will be checked in the **Edit** Menu.
2. Select the desired pattern from the area below the Palette. The selected pattern will be enclosed with a white box.
3. Select a foreground color in the Palette with the left mouse button and a background color with the right mouse button. A background color is required for solid objects with a pattern.
4. Position the cursor in the Drawing Area at the center of the desired ellipse and hold down the left mouse button to mark the origin of the object.
5. Move the cursor outward to form a circle of the desired horizontal dimension.
6. While still holding the left mouse button down, click the right mouse button and move the cursor up/down or left/right until the desired ellipse has been formed. (This takes some practice to determine how to form an ellipse of the proper size and orientation.)
7. Release the left mouse button to draw the figure, or press **Esc** to abort this function.
8. If necessary, use the **Scale** command to rotate the ellipse.

Solid Arc

1. Select the Solid Arc figure from the Figure Menu using either mouse button. The Solid Arc figure will be enclosed with a white box and **Draw** will be checked in the **Edit** Menu.
2. Select the desired pattern from the area below the Palette. The selected pattern will be enclosed with a white box.
3. Select a foreground color in the Palette with the left mouse button and a background color with the right mouse button. A background color is required for solid objects with a pattern.
4. Position the cursor in the Drawing Area at the center of the desired arc and hold down the left mouse button to mark the origin of the object.
5. Move the cursor away from the starting point to form a circle of the desired radius with the cursor located at one end of the arc.
6. While still holding the left mouse button down, click the right mouse button and move the cursor clockwise or counter-clockwise until the desired arc has been formed.
7. Release the left mouse button to draw the figure or press **Esc** to abort this function.

Solid Polygon

1. Select the Solid Polygon figure from the Figure Menu using either mouse button. The Solid Polygon figure will be enclosed with a white box and **Draw** will be checked in the **Edit** Menu.
2. Select the desired pattern from the area below the Palette. The selected pattern will be enclosed with a white box.
3. Select a foreground color in the Palette with the left mouse button and a background color with the right mouse button. A background color is required for solid objects with a pattern.
4. Position the cursor in the Drawing Area and hold down the left mouse button to mark the origin (starting point) of the object.
5. Move the cursor to another corner to form the first side of the polygon. While still holding the left mouse button down, click the right mouse button to end the first side and start the second side. Continue this procedure until the desired shape has been formed. Up to 14 directional changes can be made.
6. Release the left button to draw the figure, or press **Esc** to abort this function.

Variable Color

The variable color function is a feature of the Draw for Windows program that is used in combination with the SiteScan 2000 for Windows software to display objects in different colors depending on the status of a Function Block or a digital control point. Variable color is indicated on the Palette with the letters "var." A variable color can be edited after it is drawn using the **Edit Variables** command.

When drawn as a foreground color (by selecting "var" with the left mouse button), the variable color function requires a color input command. When the "var" color is drawn as a background color (by selecting "var" with the right mouse button), it draws **transparent** instead. A transparent background is used, for example, when drawing a text object on top of a Variable color object.

The color input command can reference the following:

- A Function Block ID name from the configuration text. SiteScan 2000 for Windows displays the color associated with the FB's status code (see the section **The Use of Color** on page 2-17). This feature is commonly used when drawing floorplans.

  Example: RC0203_1**$C** where RC0203_1 is the Function Block ID name and **$C** is a mandatory code representing the color (status code) broadcast by the FB.

- A conditional expression which evaluates the status of a digital value. The expression specifies which color to display in SiteScan 2000 for Windows for each status. This feature is commonly used together with text and variable text. For more information, see the section **The Variable Text Function** on page 6-49.

  Example: **? SFAN$ONOF 95 97** where **FAN** is the MBcode (defined in Eikon) and **95** and **97** represent the colors for the "ON" condition (white) and the "OFF" condition (gray).

When working with SiteScan 2000 for Windows version 2.5 or later, any color on the draw palette can be used as a variable color with the exception of "VAR." The following table lists the index numbers for each color on the palette. These numbers should be used to represent the desired color in a conditional expression. Color index numbers are listed in the table in the same order that they appear in the palette. See Table 6-3 on page 6-6 for the color names and RGB values.

When using variable color in graphics with SiteScan 2000 for Windows version 2.0c or below, only a limited number of colors are available for variable color, and different index numbers must be used to specify these variable colors. Figure 6-24 displays the index numbers for those colors that may be used as variable color for previous versions of SiteScan 2000 for Windows.

Red	Yellow	Green	Cyan	Blue	Purple	White	Orange	Leaf	Teal	Skyblue	Violet	Black	Peach	Brick	Flesh	Mustard	Concrete	Creamwash	Cream	Lime	Olive	Tealwash	Aqua	Light Blue	Lavender
65	70	75	80	85	90	95	100	105	110	115	120	Var	125	130	135	140	145	150	155	160	165	170	175	180	185
66	71	76	81	86	91	96	101	106	111	116	121	---	126	131	136	141	146	151	156	161	166	171	176	181	186
67	72	77	82	87	92	97	102	107	112	117	122	192	127	132	137	142	147	152	157	162	167	172	177	182	187
68	73	78	83	88	93	98	103	108	113	118	123	191	128	133	138	143	148	153	158	163	168	173	178	183	188
69	74	79	84	89	94	99	104	109	114	119	124	190	129	134	139	144	149	154	159	164	169	174	179	184	189

Figure 6-23: Variable Color Index Numbers (for use with SiteScan 2000 for Windows 2.5 and above)

Red	Yellow	Green	Cyan	Blue	Purple	White	Orange	Leaf	Teal	Skyblue	Violet	Black	Peach	Brick	Flesh	Mustard	Concrete	Creamwash	Cream	Lime	Olive	Tealwash	Aqua	Light Blue	Lavender
4	6	2	3	1	5	7	30	33	36	48	24	Var	51						57		45		39	42	54
						62						---													
12	14	10	11	9	13	15	31	34	37	49	25	16	52						58		46		40	43	55
						61						60													
20	22	18	19	17	21	23	32	35	38	50	26	8	53						59		47		41	44	56

Figure 6-24: Variable Color Index Numbers (for use with SiteScan 2000 for Windows 2.0c and below)

NOTE Draw for DOS includes three shades of pink that are not available in Draw for Windows, although both Draw for Windows and SiteScan 2000 for Windows can display graphics containing these colors. The variable color index numbers for these colors are as follows: Bright Pink = 27, Medium Pink = 28, Dark Pink = 29.

NOTE Although variable colors can be used in any layer except 00 and 63, the standard is that they are used only in layers 5-45, with one variable color per layer.

To draw a Variable color

1. Select the proper layer. The standard is that Variable colors use layers 05-45. See the section **The Layer Command** on page 6-33 for details.
2. Select the desired type of figure from the Figure Menu. The figure will be enclosed with a white box and **Draw** will be checked in the **Edit** Menu.
3. Pick the Variable Color function (indicated as "var" on the Palette) using the left mouse button. The "var" color will be enclosed with a white box.
4. Draw the figure using the steps described for each figure (see the section **How to draw objects** on page 6-38).
5. Press **F5** or issue the **Edit**, **Edit**, **Variables** command and pick the figure with the left mouse button. A pop-up will appear on the screen.

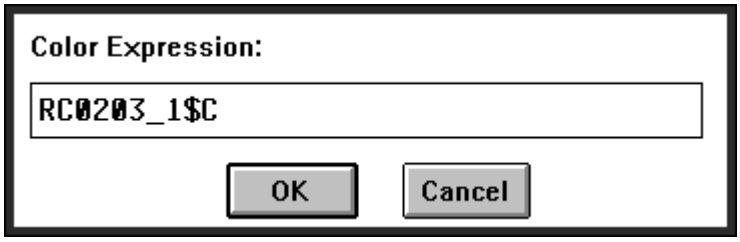


Figure 6-25: Defining a Variable Color

6. Type the color input command and press the **Enter** key to enter the variable color command or press **Esc** to abort this function. This command is not case sensitive.

   Example: **RC0203_1$C** where **RC0203_1** is the ID name and **$C** is a mandatory code representing the color (status code) broadcast by the FB.

NOTE If a variable color input command is not entered, then SiteScan 2000 for Windows displays the object in mustard color (representing a configuration error).

The Pickable Window Function

The Pickable Window Function is a feature of the Draw program that is used in combination with SiteScan 2000 for Windows primarily to allow access from one graphic frame to another. This function is indicated on the Figure Menu as "Pick Win". SiteScan 2000 for Windows ignores any colors associated with pickable windows. A pickable window can be edited after it is drawn using the **Edit Variables** command. The fourth line style (or closely-knitted line) is used primarily for drawing pickable windows.

Each pickable window must be assigned a window function command. The window function command can accept any valid SiteScan 2000 for Windows manual command and is used as follows:

- When directing SiteScan 2000 for Windows to display another graphic frame, enter the manual command "**GO**" followed by the ID name of the destination from the configuration text.

  Example: **GO** DC0201_1 where **GO** is a mandatory instruction and DC0201_1 is the ID name of the destination.
- When directing SiteScan 2000 for Windows to issue a different manual command, enter that command as it would be entered in SiteScan 2000 for Windows.

  Example: **PA ,,3,4** where **PA** is a manual command and **,,3,4** is the address. When this window is picked, SiteScan 2000 for Windows will display the parameter page for FB no. 4 in module no. 3 of the current installation.

  Example: **SCH** When this window is picked, SiteScan 2000 for Windows will display the Schedules page.

  Example: **FBHELP** When this window is picked, SiteScan 2000 for Windows will display a Function Block Help screen if one exists.

To draw a pickable Window

1. Select the proper layer. The standard is that pickable Windows use layer 62. See the section **The Layer**

Command on page 6-33 for details.

2. Select the "Pick Win" figure from the Figure Menu. The figure will be enclosed with a white box and **Draw** will be checked in the **Edit** Menu.
3. Position the cursor in the Drawing Area near the text or symbol to be windowed.
4. Hold down the left mouse button and move the cursor to form a hollow rectangle around the text or symbol. Release the left mouse button to draw the window. A pop-up will appear on the screen.

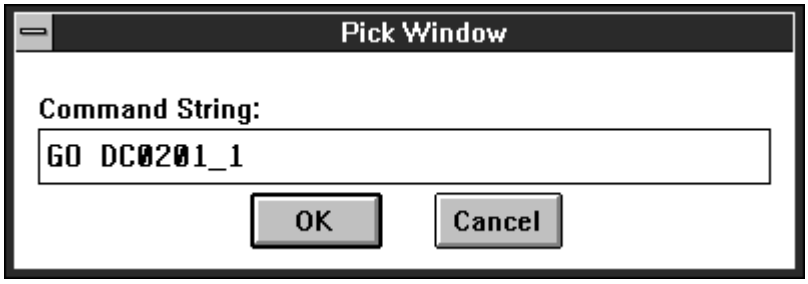


Figure 6-26: Defining a Pickable Window

5. Type the Window Function command. This command is not case sensitive.

   Example: **GO DC0201_1** where **GO** is a mandatory instruction and **DC0201_1** is the node ID name to which you want to go when that window is picked.

   Example: **PA ,,3,4** where **PA** is a SiteScan 2000 for Windows manual command and **,,3,4** is the address. When this window is picked, SiteScan 2000 for Windows will display the parameter page for FB # 4 in module # 3 of the current installation.

   Example: **EDIT Z4H15_1$FLOW$OVS** When issued from a graphic, edits the parameter for the FB having an FBID of **Z4H15_1**.

   Example: **SET Z4H15_1$FLOW$OVR Y Z4H15_1$FLOW$OVS ON** When issued from a graphic for the FB having an FBID of **Z4H15_1**, this command locks the fan status digital input to **ON**.

   For more information about using manual commands in SiteScan 2000 for Windows, see the section **Commands** on page 3-1 in the SiteScan 2000 User's Guide.
6. Press the **Enter** key to enter the command, or press the **Esc** key to abort this function.

The Variable Text Function

When used with SiteScan 2000 for Windows, the variable text function can create a string that changes based on the evaluation of a user defined expression. This function is indicated on the Figures Menu as **"Variable Abc"**. Variable text has also been referred to as "stacked text" or "dynamic text". Variable text can be edited after it is drawn using the **Edit Variables** command.

Because Draw for Windows does not support multiple drawing modes, files created in Draw for DOS containing Variable Color, Stacked Text (i.e., open/closed, normal/alarm, dty/cln) must be edited before being saved in Draw for Windows. To do this, **Import** the **.bin** file into Draw for Windows. Then **Delete** the old Variable Color-Stacked Text from the drawing. Next, draw the Variable Color-Variable text using the method described in the section **To draw Variable color-Variable text**. Finally, save the drawing as a **.gfx** file and recompile the configuration text.

NOTE The standard layers for variable text are 46-61. Variable text cannot be used in layer 00 or 63.

A Variable Text string is composed of two elements -- **Field Width** and **Text Expression**.

The **Field Width** defines the string for the Draw environment. It allows you to reserve enough physical space in the graphic for the runtime strings to display without overwriting other graphic elements. The **Text Expression** defines what will be displayed in the SiteScan 2000 for Windows runtime environment. It can be either a simple or conditional expression. A simple text expression is used to display a single value, such as a point value. A conditional text expression is used to select among a group of strings based on a status value.

Simple Expressions

In the examples below, **FBID** is the node ID name from the configuration text (used only if the value exists in a different FB), **xxxx** is the MBcode (defined in Eikon), and **$S** indicates a status value (**$P** would represent a parameter value). The code for parameter or status values may vary between microblocks. To determine the correct code for a parameter or status value, use the **Alt-Pick** feature of SiteScan 2000 for Windows (see the section **The Parameter Page** on page 5-5).

Example 1

In this example, we want to display the current status of an analog input.

Field Width:**00.00**

Text Expression:**FBIDSxxxx$VAL**

The field width is entered as "00.00" since an analog input normally needs five characters to display its status correctly. This string means that a numerical value will replace the Field Width string at runtime and it is expected to be no more than five characters wide. The Text Expression references the status value of the analog point.

Example 2

In this example, we want to display the current status of a digital output.

Field Width:**OFF**

Text Expression:**FBIDSxxxx$ONOF**

The field width is entered as "OFF" since a digital output needs at most three characters to display its status correctly. This string means that a digital value (ON/OFF) will replace the Field Width string at runtime. The Text Expression references the status value of the digital point.

Conditional Expressions

In the examples below, **?** indicates a conditional expression. Other codes are explained previously or are explained within these examples.

Example 1

In this example, we want to display the string "Alarm" when a digital input turns on, and display "Normal" when the input turns off.

Field Width:**ALMNOR**

Text Expression:**? FBIDSxxxx$ONOF " Alarm" "Normal"**

The string "ALMNOR" provides enough space to position other controls nearby in the drawing without overlapping them at runtime. The Text Expression is of the form:

? <expression> "text1" "text2"

The above command string is read as follows:
If <expression> is TRUE (non-zero), then display **"text1"**; otherwise, display **"text2"**. For the above example, if the digital point (referenced by **FBIDSxxxx$ONOF**) is ON, then display **" Alarm"**; otherwise, display **"Normal"**.

When typing the text to be displayed for conditional expressions, it is important to use all of, but no more than, the allotted field width. For example, notice that a space is entered before the first letter in the text "Alarm" because it uses only five of the six characters defined by the field width string. This space ensures that when going from **"Normal"** to **" Alarm"**, the string **"Normal"** is completely erased by the new string **" Alarm"**. Note that variable-pitch fonts may require more leading/trailing spaces to ensure that the strings are completely replaced.

Example 2

In this example, we want to display the string "Freeze Alarm" when an analog input status falls to 32.0 degrees Fahrenheit or below; otherwise display the string "OK".

Field Width:**Freeze_AlaOK**

Text Expression:**? FBIDSxxxx$VAL<32.0 "Freeze Alarm" "OK "**

The extra spaces in the string **"OK "** are needed to ensure the "Freeze Alarm" string is completely replaced when the "OK" text is displayed.

An expression may use any of the following characters:

Table 6-4: Variable Text Characters

Character	Meaning
|	bitwise OR
^	exclusive OR
&	bitwise AND
=	equality
≠	inequality (keystroke is ALT + 0216)
>	greater than
≥	greater than or equal to (keystroke is ALT + 0242)
<	less than
≤	less than or equal to (keystroke is ALT + 0243)
+	addition
-	subtraction
*	multiplication
/	division
~	unary minus
!	NOT
( )	parenthesis used to modify evaluation order

To draw Variable text

1. Select the proper layer. The standard layers for Variable text are 46-61. See the section **The Layer Command** on page 6-33 for details.
2. Select the "Variable Abc" figure from the Figure Menu. The figure will be enclosed with a white box and **Draw** will be checked in the **Edit** Menu.
3. Select a foreground color in the Palette with the left mouse button and a background color with the right mouse button. The background color must match the color of the area where the variable text is drawn to avoid a “boxed” look. See the section **To draw Variable color-Variable text** on page 6-54 about using "var" as the foreground color.
4. Position the cursor in the Drawing Area and click the left mouse button to mark the origin (starting point) of the object. A pop-up appears on the screen.

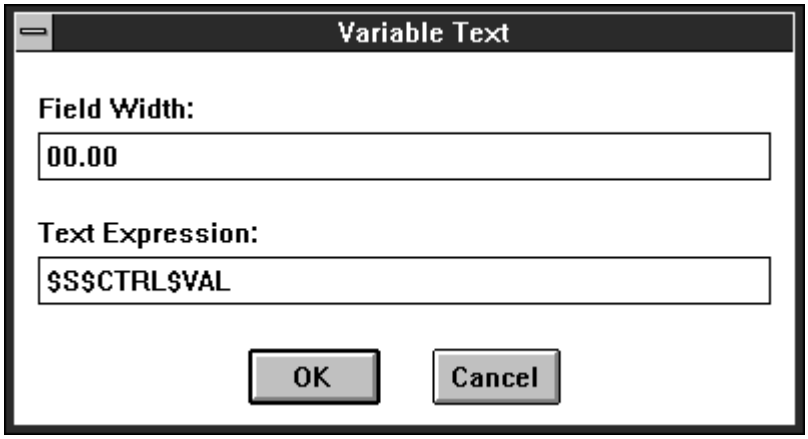


Figure 6-27: Defining Variable Text

5. For the "Field Width", type the required number of characters for the value to be displayed using any letters or numerals.
   - Example **Digital** field width (3 characters) -- **OFF**
   - Example **Analog** field width (5 characters) -- **00.00**
6. For the "Text Expression", type the variable input command. This command is not case sensitive.

   Example: **SFAN$ONOF**

   This will display the "ON" or "OFF" status of the digital input whose MBcode is **FAN**.

   Example: **SCTRL$VAL**

   This will display the value for an analog input point whose MBcode is **CTRL**.

   Example: **DC0304_1SFAN$ONOF**

   This will display the "ON" or "OFF" status of the digital output whose MBcode is **FAN** in the Function Block whose ID name in the configuration text is **DC0304_1**. This variable text command originates from a floor plan (as opposed to the equipment graphic screen).

   Example: **DC0304_1SCTRL$VAL**

   This will display the analog value of the zone temperature whose MBcode is **CTRL** in the Function Block whose ID name in the configuration text is **DC0304_1**. This variable text command originates from a floor plan (as opposed to the equipment graphic screen).

Example: **? DC0304_1SCTRL$VAL ≥ 75 "Is above 75" "Is below 75"**

This will display "Is above 75" if the zone temperature is greater than or equal to 75. Otherwise it will display "Is below 75".

7. Press **OK** to draw the variable text or press **Cancel** to abort.

To draw Variable color-Variable text

1. Select the proper layer. The standard layers for Variable text are 46-61. See the section **The Layer Command** on page 6-33 for details.
2. Select the "Variable Abc" figure from the Figure Menu. The figure will be enclosed with a white box and **Draw** will be checked in the **Edit** Menu.
3. Select "var" as the foreground color in the Palette with the left mouse button and a background color with the right mouse button. The background color must match the color of the area where the variable text is drawn to avoid a "boxed" look. However, if the text is drawn on top of a Variable color object, it should be drawn with a transparent background.
4. Position the cursor in the Drawing Area and click the left mouse button to mark the origin (starting point) of the object. A pop-up will appear on the screen.

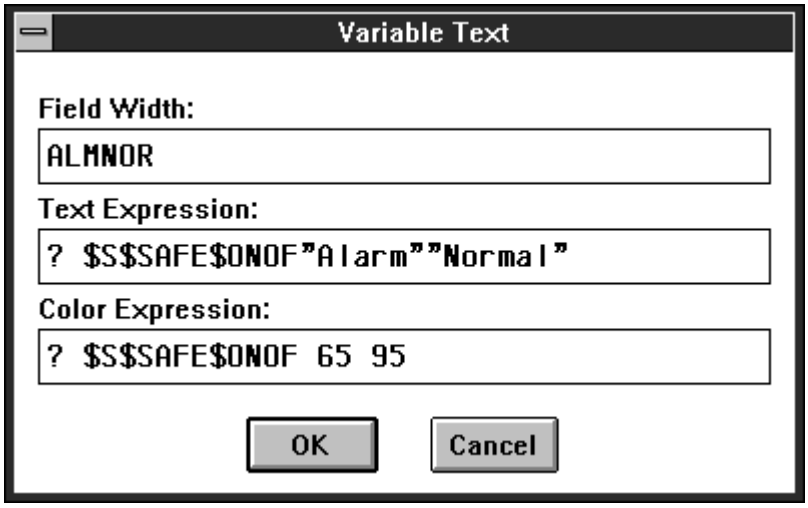


Figure 6-28: Defining Variable color-Variable text

5. For the "Field Width", type the required number of characters for the value to be displayed using any letters or numerals.

   Example **Digital** field width (6 characters) -- **ALMNOR**

6. For the "Text Expression", type the variable input command. This command is not case sensitive.

   Example: **? SSAFE$ONOF " Alarm" "Normal"**

   This will display the status of a digital input point whose MBcode is **SAFE**.

7. For the "Color Expression", type the color input command.

   Example: **? SSAFE$ONOF 65 95**

   This will display the first text in the color **65** (red) and the second text in the color **95** (white).

   See Table 6-3 (on page 6) and Figures 6-23 and 6-24 (on page 45) for the colors which SiteScan 2000 for Windows may display as a variable color. Using a color not indicated as a variable color will yield undetermined results.

NOTE If a variable color input command is not entered, then SiteScan 2000 for Windows displays the text in mustard color (represents configuration error).

---

8. Press **OK** to draw the text or press **Cancel** to abort.

About Prime Variables

A prime variable is a value sent by an FB to the gateway module where the Workstation can retrieve it quickly without having to access each individual FB via the CMnet. Prime variables (and colors) are sent to the gateway module only when 1) its module has the token, and 2) its FB update timer has expired. The FB update timer is reset after the information has been sent. Because prime variables are accessed as quickly as colors, they can be placed on floorplan graphics with minimal additional draw time.

The prime variable is determined when the FB is created. Eikon provides a Prime Variable microblock which can be tied to a specific *floating point* value which the Workstation needs quick access to (i.e., Zone Temp). Zone temperature is typically defined as the prime variable for terminal zone FBs. Only one prime variable can be defined per Function Block.

Old-style (non-Eikon) FBs may define the prime variable as a floating point value, an integer, or an On/Off point.

Use the following syntax to display a prime variable:

- Floating Point values -- **FBID$T**
- Integer values* -- **FBID$D**
- On/Off values* -- **FBID$O**

  * Valid only for old-style (non-Eikon) function blocks.

Where **FBID** is the node ID name from the configuration text (used only if the value exists in a different FB), and the code following the **$** identifies the type of value.

To draw Variable text for a Prime Variable

1. Select the proper layer. The standard is that Variable text use layers 46-61. See the section **The Layer Command** on page 6-33 for details.
2. Select the "Variable Abc" figure from the Figure Menu. The figure will be enclosed with a white box and **Draw** will be checked in the **Edit** Menu.
3. Select a foreground color in the Palette with the left mouse button and a background color with the right mouse button. If a background color is used, it must match the color of the area where the variable text is drawn to avoid a “boxed” look. See the section **To draw Variable color-Variable text** on page 6-54 about using "var" as the foreground color.
4. Position the cursor in the Drawing Area and click the left mouse button to mark the origin (starting point) of the object. A pop-up will appear on the screen.
5. For the "Field Width", type the required number of characters for the value to be displayed using any letters or numerals.
   - Example **Digital** field width (3 characters) -- **OFF**
   - Example **Analog** field width (5 characters) -- **00.00**
   - Example **Integer** field width (3 characters) -- **000**

6. For the "Text Expression", type the variable input command. This command is not case sensitive.

   Example: **DC0304_1$T**

   This will display the analog value of the prime variable of the Function Block whose ID name in the configuration text is **DC0304_1**.

   Example: **$T**

   This will display the analog value of the prime variable of the Function Block to which the graphic is associated in the configuration text.

7. Press **OK** to draw the variable text or press **Cancel** to abort.

About Global Points

Global points are used to send and receive data between modules. They consist of the following microblocks: LAN Analog Input, LAN Digital Input, LAN Analog Output, LAN Digital Output.

If the global point has a 'Listen to' address defined, then you can use the following codes to access the current status for display on a graphic:

Table 6-5: IOCODEs for a Global AI

IOCODE	What it means
FBIDPxxxx$CMFB	The global (AI) is defined with an address
FBIDPxxxx$OVR	The point is locked (YES/NO)
FBIDSxxxx$VALD	Zero: Not receiving -- using fail value Non-zero: receiving
FBIDSxxxx$DISP	Analog value
FBIDSxxxx$CODE	Command code received

Table 6-6: IOCODEs for a Global DI

IOCODE	What it means
FBIDPxxxx$CMFB	The global (DI) is defined with an address
FBIDPxxxx$OVR	The point is locked (YES/NO)
FBIDSxxxx$VALD	Zero: Not receiving -- using fail value Non-zero: receiving
FBIDSxxxx$DISP	Zero: point is OFF Non-zero: point is ON
FBIDSxxxx$CODE	Command code received

Table 6-7: IOCODEs for a Global AO

IOCODE	What it means
FBIDPxxxx$CMFB	The global (AO) is defined with an address
FBIDPxxxx$OVR	The point is locked (YES/NO)
FBIDSxxxx$DISP	Analog value
FBIDSxxxx$CODE	Command code transmitted

Table 6-8: IOCODEs for a Global DO

IOCODE	What it means
FBIDPxxxx$CMFB	The global (DO) is defined with an address
FBIDPxxxx$OVR	The point is locked (YES/NO)
FBIDSxxxx$DISP	Zero: point is OFF Non-zero: point is ON
FBIDSxxxx$CODE	Command code transmitted

Examples

The MBcode in the following examples is "M001".

? FBIDPM001$CMFB (? FBID$S$M001$DISP "ON" "OFF") "Not used"

The above statement reads like this:

- If the LAN DI is being used and it's ON, display "ON". If the LAN DI is being used and it's NOT ON, display "OFF".
- If the LAN DI is NOT being used, display "Not used".

? FBIDPM001$CMFB (? FBID$S$M001$VALD "Receiving" "Using Fail Value") "Not used"

The above statement reads like this:

- If the LAN DI is being used and the data is valid, display "Receiving". If the LAN DI is being used and the data is NOT valid, display "Using fail value".
- If the LAN DI is NOT being used, display "Not used".

? FBIDPM001$CMFB (? FBID$S$M001$DISP) "Not used"

The above statement reads like this:

- If the LAN AI is being used, display the analog value.
- If the LAN AI is NOT being used, display "Not used".

The Bitmap Function

The Bitmap function is a feature of Draw that can be used to insert bitmap images into a graphic. This function is indicated on the Figures menu as "BMP." Once inserted into the graphic, a bitmap image can be selected, moved, copied and deleted. A bitmap image in a graphic cannot be scaled, rotated or re-shaped.

To insert a bitmap file into a graphic

1. Select the **BMP** figure from the Figure menu. The figure will be enclosed with a white box and Draw will be checked in the Edit Menu.
2. Position the cursor in the drawing area and click the left mouse button to mark the origin (starting point) of the object. A pop-up will appear on the screen.

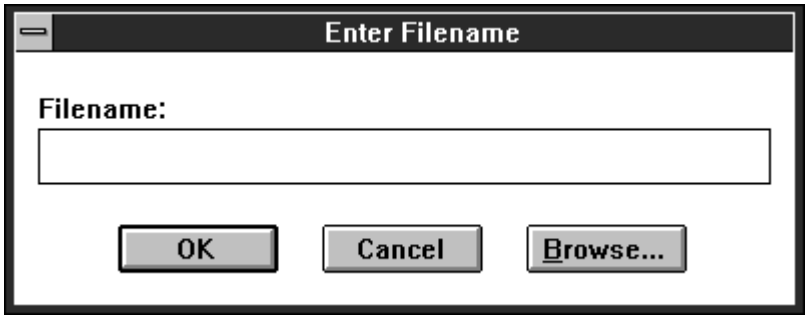


Figure 6-29: Inserting a Bitmap file

3. Enter the complete path and filename for the bitmap image you want to insert (you may omit the .bmp extension). You may enter only the eight-character filename if the file is located in the same directory as the current graphic.
4. Select **OK** to insert the bitmap at the selected point or select **Cancel** to abort.

* * *

7 Utility Applications

Configuration Utilities

Overview

This program allows an operator to change the SiteScan 2000 for Windows default System ID, update or compile configuration text, merge systems, or build a custom M68 directory.

System ID

This utility allows you to change the SiteScan 2000 for Windows default System ID, which is the system that SiteScan 2000 for Windows and other applications look for when launched.

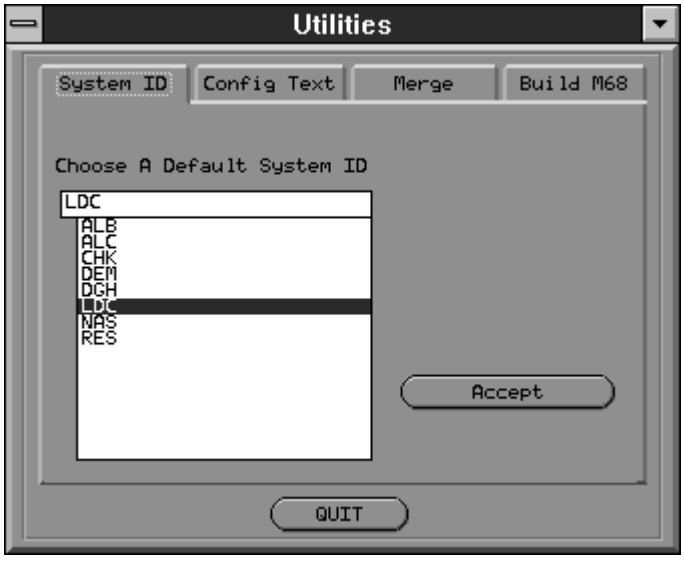


Figure 7-1: The System ID Utility

The upper box displays the System ID for the currently active system. The lower box displays the three-character System ID for every System defined in the **alc.ini** file. To change the current System ID, select the desired System ID from the list or type it in after placing the cursor in the upper box; then press **Accept**. This utility updates the **Username** line in the [SVW] section of the **alc.ini** file.

Config Text

This utility allows you to update or compile the configuration text file for the specified System. Each system has a unique configuration text file (**xxxcnfig.txt**) which defines the system database structure.

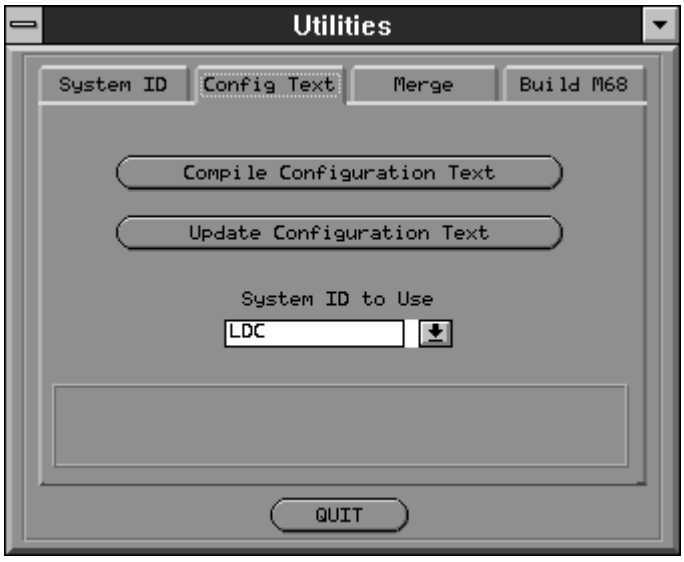


Figure 7-2: The Config Text Utility

The compile and update processes are exact processes which keep each System's database current. These processes are described below:

- The **Compile** button -- Creates the database structure files (for the specified System ID) which are actually used by SiteScan 2000 for Windows during its operation. Once compiled, the configuration text file is not used again by SiteScan 2000 for Windows. Note that the original **xxxcnfig.dat** file is renamed to **xxxcnfig.old**, where **xxx** is the three-character System ID.
- The **Update** button -- Rewrites the configuration text file (for the specified System ID) from the database structure files. SiteScan 2000 for Windows provides an opportunity to update configuration text if the user attempts to exit after making changes to the database structure files (such as parameter or schedule changes). Note that the original **xxxcnfig.txt** file is

renamed to **xxxcnfig.olt**, where **xxx** is the three-character System ID.

Merge

This utility merges the system files from the Source System to the Destination System. It is often used to merge the files from System CHK into another system after they have been approved.

CAUTION Before using the **Merge** utility, we recommend using the **Backup & Restore** utility to backup the System files for both the Source System and the Destination System.

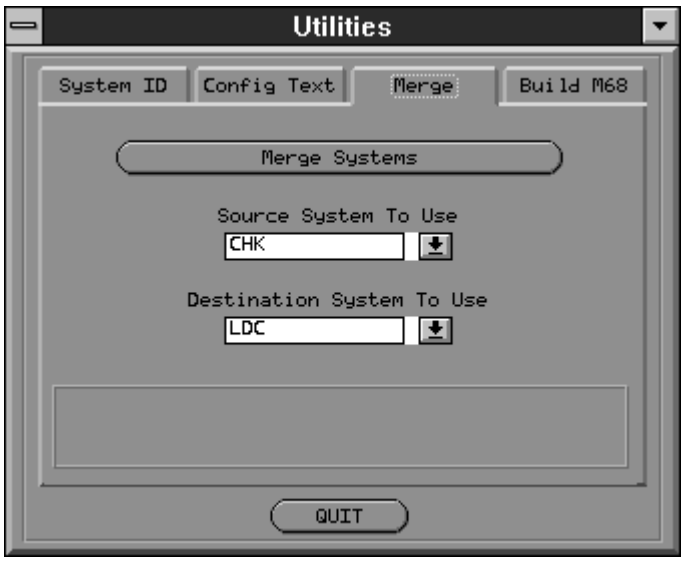


Figure 7-3: The Merge Utility

The Merge utility uses the following procedure:

1. Creates the destination system directory if it does not exist (**c:\ss2000\xxx**).
2. Creates a custom M68 directory under the destination directory if it does not exist (**c:\ss2000\xxx\m68**).
3. Creates a configuration text file (with a blank Telephone section) for the destination system if it does not exist.
4. Compiles the destination configuration text if a corresponding configuration data file does not exist.
5. Updates the source system's configuration text.

6. Copies the following files from the source system directory (**c:\ss2000\xxx**) to the destination system directory:
   - ***.??c**
   - ***.bin**
   - ***.gfx**
7. Performs a **Build M68** from the source custom M68 directory to the destination custom M68 directory. This process brings over Function Block files.
8. Copies the following files from the source custom M68 directory (**c:\ss2000\xxx\m68**) to the destination custom M68 directory:
   - ***.bin**
   - ***.eik**
9. Combines both the source configuration text and the destination configuration text into one configuration data file. This combined configuration data file overwrites the original destination configuration data file in the destination system directory.
10. Updates the destination configuration text so that it matches the configuration data file.

Build M68

This utility searches the configuration text (for the specified System ID) and copies the necessary Function Block files from the Source directory to the Destination directory. If a file already exists, a pop-up allows you to specify whether to overwrite the file (see the cautions below).

CAUTION Before using the **Build M68** utility, we recommend using the **Backup & Restore** utility to backup the System files for both the Source System and the Destination System.

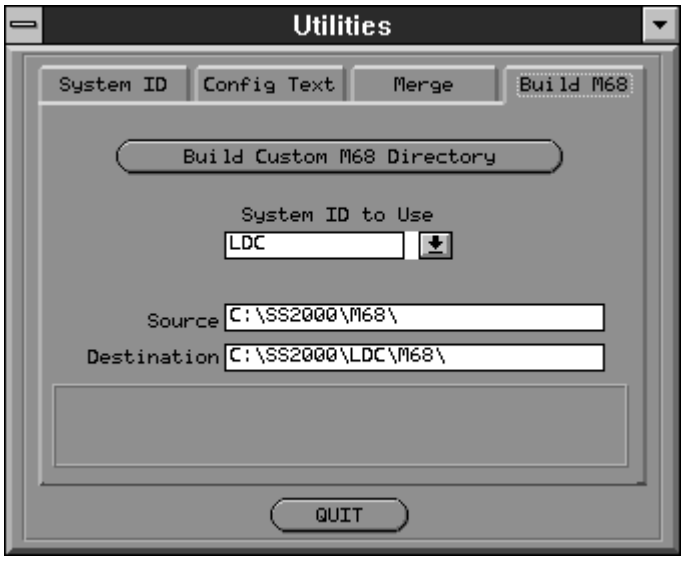


Figure 7-4: The Build M68 Utility

This utility could be used, for example, to copy Function Block files from one custom M68 to another, from the master M68 to a custom M68, or from a custom M68 to the master M68.

CAUTION This utility allows you to overwrite Function Block files in the Destination directory with Function Block files from the Source directory. Problems could arise if there are modules on the System that are near or at their memory limits if the new FB files require more memory than is available. For this reason, we recommend using the **FB fit** utility before using the **Build M68** utility.

FB Fit

Overview

This program determines whether the specified Function Blocks from the master or custom M68 directory will fit into the specified module. It supports both Exec 3 and Exec 4 modules, although some microblocks can only be downloaded into modules having higher Exec versions.

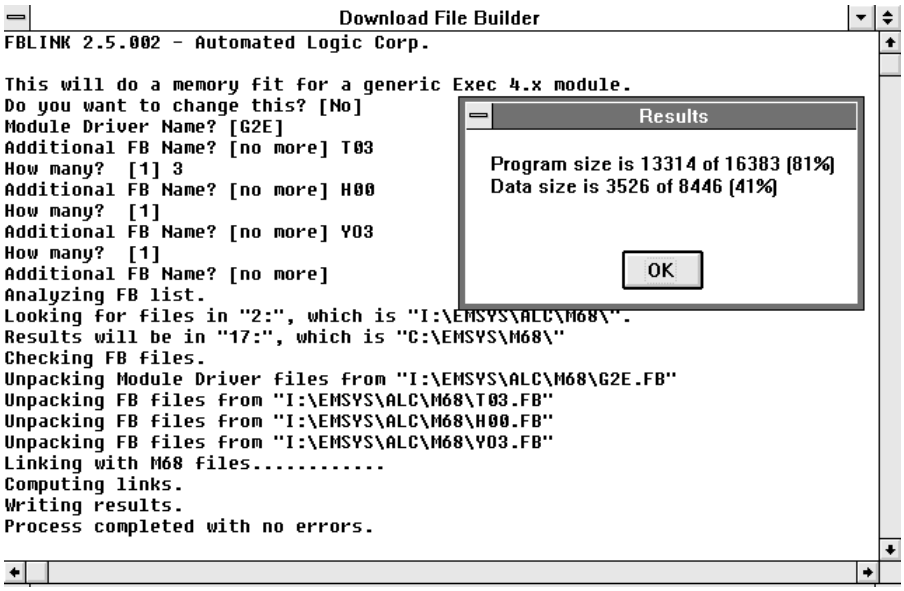

Download File Builder
FBLINK 2.5.002 - Automated Logic Corp.
This will do a memory fit for a generic Exec 4.x module.
Do you want to change this? [No]
Module Driver Name? [G2E]
Additional FB Name? [no more] T03
How many? [1] 3
Additional FB Name? [no more] H00
How many? [1]
Additional FB Name? [no more] YO3
How many? [1]
Additional FB Name? [no more]
Analyzing FB list.
Looking for files in "2:", which is "I:\EMSYS\ALC\M68\".
Results will be in "17:", which is "C:\EMSYS\M68\"
Checking FB files.
Unpacking Module Driver files from "I:\EMSYS\ALC\M68\G2E.FB"
Unpacking FB files from "I:\EMSYS\ALC\M68\T03.FB"
Unpacking FB files from "I:\EMSYS\ALC\M68\H00.FB"
Unpacking FB files from "I:\EMSYS\ALC\M68\YO3.FB"
Linking with M68 files.....
Computing links.
Writing results.
Process completed with no errors.
Results
Program size is 13314 of 16383 (81%)
Data size is 3526 of 8446 (41%)
OK

Figure 7-5: The FB Fit Utility

When launched, this utility opens a window and asks for specific information. The default responses are displayed within brackets. To accept the default, press **Enter**. To enter another response, type it on the keyboard then press **Enter**. When the process is complete, the results are displayed on a pop-up.

Analyzing the Results

The results of the process are displayed on the **Results** pop-up. In order for the Function Blocks to fit in the specified module, both the program size and the data size must each be less than 100%. If the results are greater than 100%, then the number or size of FBs to be stored in the module must be reduced.

If the process is unsuccessful, a pop-up notifies you of the problem and allows you to view the **fblink.log** file. This file, stored in the **c:\ss2000\m68** directory, is created every time the process is executed and can be viewed at any time using a text editor.

Backup & Restore

Overview

This utility uses standard ZIP compression to back up and restore selected types of files for the specified System ID.

Backup

This utility backs up files from the Source location(s) to the Destination location. This utility uses standard ZIP compression to back up the selected types of files for the specified System ID.

NOTE System files, Alert data, and Trend Historian data should be backed up regularly. The System files should also be backed up before performing a global modify or installing a new version of SiteScan 2000 for Windows.

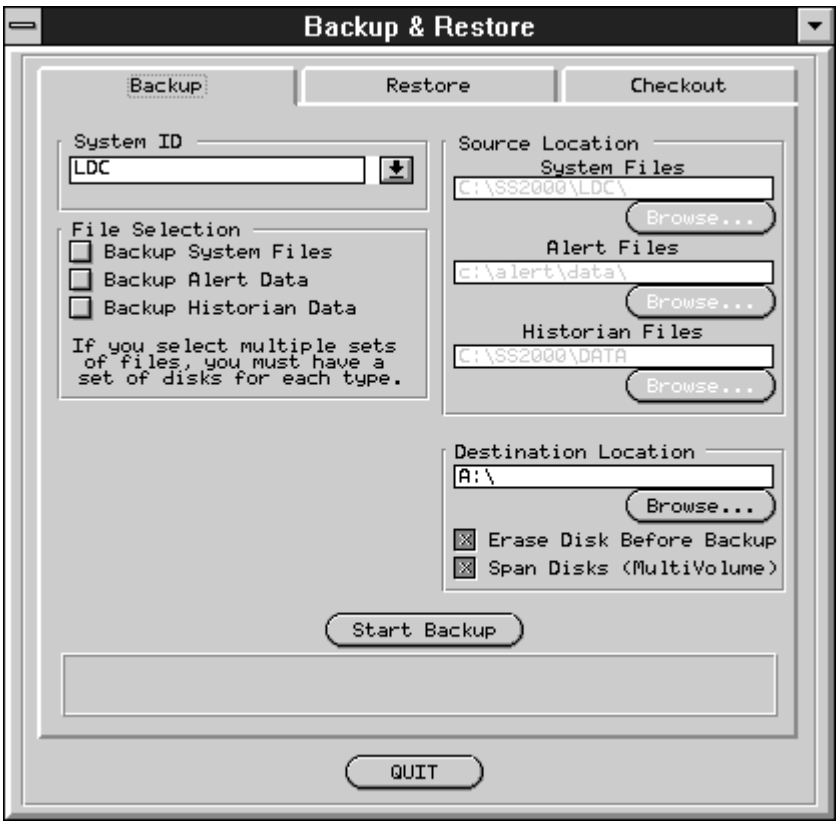


Figure 7-6: The Backup Utility

The following types of files can be backed up with this utility:

- **System files** -- Includes all files except for ***.rep** files and all subdirectories. The backup file is named **xxx_sysd.zip**, where **xxx** is the three-character name of the selected System ID. The default Source location is specified by the DRV3 drive mapping.
- **Alert database files** -- Includes **amsdb.*** files and if it exists, the **cfmcfg.dat** file. The backup file is named **alertdb.zip**. The default Source location is specified when Alert is installed.
- **Trend Historian database files** -- Includes **histdb.*** files. The backup file is named **histdb.zip**. The default Source location is specified by the **Set Path** option in Trend Historian.

Each file type selected requires a separate set of backup disks if a floppy drive is specified as the destination. If a hard disk is specified, the backup files are all stored in the specified destination directory.

The locations of the Source files can be specified on the right after the file types are selected. Note that the **Backup System Files** selection also backs up all subdirectories.

The destination options for **Erase Disks** and **Span Disks** function only when a floppy drive is entered as the destination.

Restore

This utility restores files from the Source location to the Destination location(s). It restores files which were backed up from the Backup utility using standard ZIP compression. It does not restore files which were backed up using the older MS-DOS backup format.

CAUTION Restored files automatically overwrite any existing files having the same name.

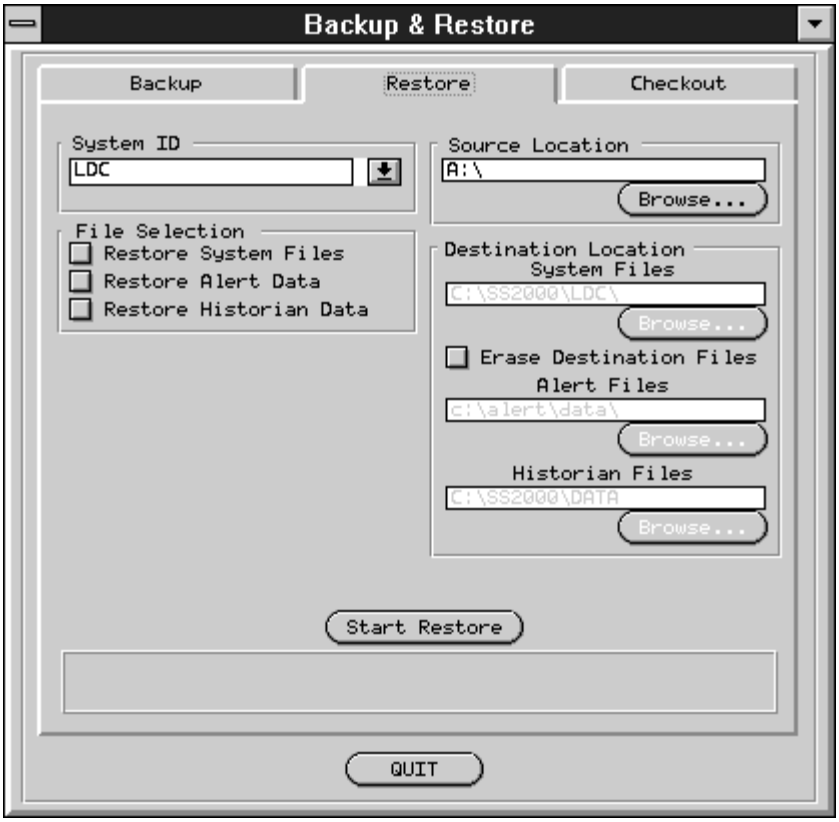


Figure 7-7: The Restore Utility

The following types of files can be restored with this utility:

- **System files** -- Looks for a backup file named **xxx_sysd.zip** or **xxx_sysf.zip**, where **xxx** is the three-character name of the selected System ID. Restores all subdirectories if any existed when the files were backed up. The default Destination location is specified by the DRV3 drive mapping.

- **Alert database files** -- Looks for a backup file named **alertdb.zip**. The default Destination location is specified when Alert is installed.
- **Trend Historian database files** -- Looks for a backup file named **histdb.zip**. The default Destination location is specified by the **Set Path** option in Trend Historian.

If the Source location is a floppy drive, each file type selected requires a separate set of backup disks. If the Source location is a hard disk, the backup files may exist in the same directory.

The destination locations can be specified on the right after the file types are selected. Note that the **Erase Destination Files** option affects only System files.

Checkout

This utility restores files for System CHK from the Source location to the Destination location. This utility restores files which were backed up from the Backup utility using standard ZIP compression. It does not restore files which were backed up using the older MS-DOS backup format.

CAUTION Restored files automatically overwrite any existing files having the same name.

The System ID is fixed as CHK in order to speed up the process of restoring files to the CHK directory. System CHK is used most often to "check out" a new System or an addition to a new system before it is actually merged into the main System files. For example, while in System CHK, a System can be checked for proper design or implementation, and configured with necessary parameters.

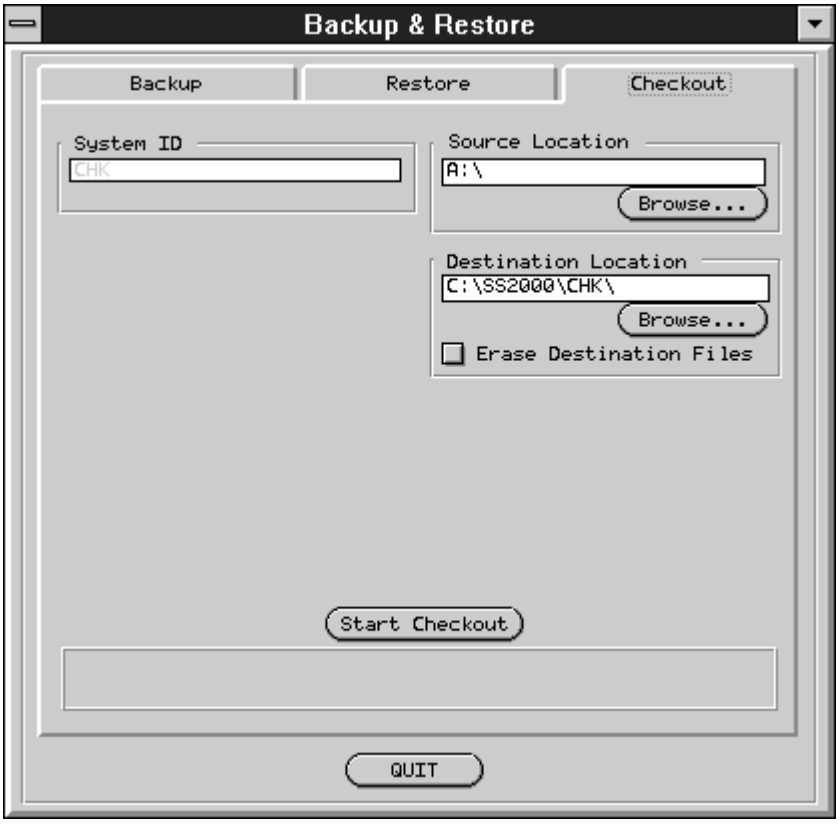


Figure 7-8: The Checkout Utility

The following types of files can be restored with this utility:

- **System files** -- Looks for a backup file named **chk_sysd.zip** or **chk_sysf.zip**. Restores all subdirectories if any existed when the files were backed up. The default Destination location is specified by the DRV3 drive mapping.

If the **Erase Destination Files** option is not enabled, then any existing files having a filename different from any restored file will remain.

* * *

8 Appendix A

Error Messages

Overview

This section lists Error messages that may appear on the screen as various events or malfunctions occur. Note that an error message does not always mean there is a software problem. It may be caused by operator error, improper entries at the keyboard or mouse, certain kinds of noise on the telephone lines, or a component or circuit failure.

SiteScan 2000 for Windows Error Messages

"[FB type mismatch, can't use defaults]"

"[WARNING -- AHD IS IN ERROR!!!]"

"Are you sure you want to load parameter defaults for this FB?"

"Can't create output file. Aborting.."

"Cannot find Flow Diagram"

"Cannot obtain system/line information. Continue anyway?"

"Changes to system configuration database have been made. Update configuration text file now?"

"Comm - NetBios error"

"Comm Aborted Advisory. Double-Shift keys pressed. Operation aborted."

"Comm Error - Bad Checksum. Response received from gateway module is missing characters (usually speed related). Use faster modem to resolve CMnet speed differences or consult an authorized service representative to change DCLAN setup."

"Comm Error - Bad Command String. Command string sent to module not recognized as a valid command. Change string to one recognized by EMS."

"Comm Error - Bad or Garbled. Bad or no response from module/FB due to noise, no communications, or no memory downloaded. Eliminate phone line/CMnet noise or verify module communications."

"Comm Error - Bad or Missing Connection"

"Comm Error - Bad Reply. Response received from gateway module is missing characters (usually speed related). Use faster modem to resolve CMnet speed differences or consult authorized service representative to change DCLAN setup."

"Comm Error - Bad Size Error. Database expected different status information than that received from the module. Download memory to module or change system files to use compatible FB."

"Comm Error - Busy Line Detected. Busy line detected at installation. Retry dialout later or check dialout modem for problems."

"Comm Error - Carrier Lost. Connection lost with installation. Go to top tab label and reconnect to installation or check modems for problems."

"Comm Error - Command Rejected. Gateway module constantly not allowing communications to installation. Request all other users to disconnect or retry later."

"Comm Error - Connection already in use. Connection used by EMS already used by another program. Change connection info to another connection or next available connection and retry; or close other application and retry."

"Comm Error - Connection Does Not Exist. Connection defined in Connections page does not exist on this workstation. Check for hardware problems or define connection that exists on workstation."

"Comm Error - Connection Not Activated. Connection used by EMS defined, but not marked active on Configure Connections page. Pick Configure Connections from Connections page and mark connection active."

"Comm Error - Connection Not Available. Connection specified by connections page is invalid (must specify connection type). Specify proper connection type for all valid lines."

"Comm Error - Connection Not Configured. Connection defined in Connections page is not configured for EMS on Configure Connections page. Pick Configure Connections from Connections page to configure hardware for use by EMS."

"Comm Error - Modem Time Out. Modem timed out before connecting. Retry dialout or increase modem time out setting in modem reset string."

"Comm Error - Module Error. Module is halted or not communicating. Parameter upload unsuccessful. Command cancelled."

"Comm Error - No Dial Tone. No dial tone present when modem dials. Verify phone line dialtone using standard telephone or check dialout modem for problems."

"Comm Error - WRU Failed. Cannot get system/line information from gateway. Verify correct gateway setup/operation; specify proper connection type for all valid lines; verify proper connections."

"Command Error - Address bad or not found. User attempted to go to an address that is not found in the configuration database. Retry command using addresses normally found in the configuration database."

"Command Error - Illegal command. User attempted a command that is not the correct syntax or is not recognized by EMS. Retype command using correct syntax or edit graphic to use correct command syntax."

"Command Error - Not connected to gateway module. User attempted a SETGCM command while not being connected to a gateway module. Connect to a gateway module and retry command."

"Command Error. User attempted an FB function from an area or group level. Retry command from an FB level."

"Command Error. User attempted to perform FB command from an area level. Go to an FB level and retry command."

"Command Error. User attempted to perform module command from an area level. Go to an FB level and retry command."

"Configuration Error. Configuration data file (xxxCNFIG.DAT) not found in system directory. Recompile configuration text and retry, or restore system and retry."

"Configuration Error. Configuration data file (xxxCNFIG.DAT) not found in system directory. Recompile configuration text and retry, or restore system and retry."

"Configuration Error. Parameter data file (xxxPARAM.DAT) not found in system directory. Recompile config text and retry."

"Configuration Error. System name variable not found in ALC.INI file. Run SystemID, enter a valid 3 letter system name, and retry."

"Configuration Error. User data base compiled under a different EMS version's compiler. Compile using a version of EMS compiler for your system."

"Configuration Update Error. EMS cannot find FB VVV in Custom M68 directory. DO NOT COMPILE CONFIG TEXT. Copy FB files to Custom M68 directory and update config text."

"Configuration Update Error. EMS cannot find file SYSVALA.DAT in Custom M68 directory. Actions: DO NOT COMPILE CONFIG TEXT. Copy SYSVALA.DAT to Custom M68 directory and update config text."

"Configuration Update Error. EMS cannot find xxxALPRM.DAT file in system directory. Compile config text, re-run EMS and re-enter setup parameters."

"Configuration Update Lockout Advisory. Another user is updating configuration text at this time. Retry configuration update later."

"Connecting to: System 'ALC', Line #2. Expecting: System 'ALC', Line #1. Connect anyway?"

"Connection not configured properly. Go to configure connections?"

"Connection type for current line does not match connection configuration. Reconfigure connection now?"

"Connections Lockout Advisory. Another user is accessing the Connections page at this time. Retry Connections page edits later."

"Enhanced Trend Error - FB #14 must be XF type. The user attempted to obtain an enhanced trend from a module that did not have an XFx FB as FB #14. Download an XFx FB as FB #14 and retry the operation."

"FB Parameter Mismatch. FB parameters in workstation differ from those in the module. Compare parameters using Shift-Parameters before making changes, then either upload parameters from module or download parameters."

"FB Version mismatch. FB in the workstation database is of a different revision or 3-letter name than that in the module. Download memory to module."

"Files for FB "VVD" not present in Custom M68 directory. Laboratory (ZONE8_3)"

"Global Modify Error. Missing Field ID and/or New Value fields. Enter Field ID and/or New Value before picking Proceed."

"Global Modify Error. Syntax error in field entry. Re-enter all fields using correct syntax."

"Global Modify Error. User attempted to global modify FB parameters from a page that modifies FB parameters (including Setpoints, Point Help, Live GFB pages). Retry from a status page or an area."

"Group Lockout Advisory. Another user is editing this group at this time. Retry group edits later."

"Groups Error - Circular definition. User attempted to add a new group name to this group which also references this group. Add a different group name or delete this group's name from the group being added."

"Groups Error - Too Many Members. User attempted to make a group with more than 32 members. Create a new group name, add members to it from this group, then add the new group name as a member of this group."

"Groups Error. No node exists in the configuration named TECSUP_1."

"Groups Error. The area or FB specified is already a member of this group."

"Illegal Reference Error. Graphic frame or manual command references ALCMEC_1, which is not a valid node ID in the configuration database. Modify graphic to correct ID reference error, or retry command using valid node ID."

"Illegal Value Error. User has syntax errors in command or in graphic file. Retry command using proper syntax or edit graphic to use proper syntax."

"Invalid DDE Request"

"Invalid Password. Try again."

"Line #1 gateway time (11:02 24-SEP-94) set to system time (12:02 24-SEP-94)."

"Live GFB Not Found Error. Graphic FB not found inside packed FB. Contact authorized service representative to resolve problem."

"Live GFBs - EXE File Error. Live GFB executable files not found in locations referenced by EIKSERVE section of ALC.INI file. Verify presence and locations of GFB files referenced by ALC.INI file."

"Live GFBs - FB Mismatch Error. The FB in the workstation database is of a different revision or 3-letter name than that in the module. Contact an authorized service representative to resolve problem.."

"Live GFBs - Parameter Mismatch Error. GFB packed into FB file is different than its matching downloaded files. Remake FB in Eikon with PackFB enabled. Contact an authorized service representative to resolve problem."

"Live GFBs Error. Eikon not able to load Graphic FB. Free up memory by closing unrelated applications and retry the operation."

"Live GFBs Error. Insufficient memory to display GFB. Free up memory by closing unrelated applications and retry the operation."

"Live GFBs Error. Insufficient memory to run Live GFB program (EIKSERVE.EXE). Free up memory by closing unrelated applications and retry the operation."

"Live GFBs Error. This version cannot display Live GFBs."

"Memory Download Error. Line #1, GCM #1, CM #2 not communicating. Memory download aborted. Verify communications to module and retry."

"Memory Download Error. Memory download to Line #1, GCM #1, CM #2 unsuccessful or aborted by user. Eliminate phone line or CMnet noise and retry; verify correct module operation."

"Memory Download Error. User tried to download memory to a module from an area level. Go to an FB and then download memory to the module."

"Missing screen file"

"Multi-Site Reference Error. Data is being referenced from multiple sites while connected to a particular site. Have database text file or graphic modified to correct error."

"No printer has been set up."

"Node in use by another user "

"NODE 1 (1, 1, 3, 2)'s parameters currently in use by another user. Try again?"

"Parameter Download Error. Parameter download to 1, 1, 2, 1 aborted due to FB version mismatch. Remake FB in Eikon with PackFB enabled. Compile config text and redownload memory."

"Parameter Download Error. Parameter download to 1, 1, 2, 1 unsuccessful or aborted by user. Eliminate phone line or CMnet noise and retry; verify correct module operation."

"Parameter Download Error. User tried to download parameters to an FB from an area level. Go to an FB and then download parameters to that FB."

"Parameter Upload Error. Parameter upload from 1, 1, 2, 1 aborted due to FB version mismatch. Remake FB in Eikon with PackFB enabled. Compile config text and redownload memory."

"Parameter Upload Error. Parameter upload from 1, 1, 2, 1 unsuccessful or aborted by user. Eliminate phone line or CMnet noise and retry; verify correct module operation."

"Parameters at this level and below - overwrite operator's database"

"Parameters Lockout Advisory. Another user is currently using a function that edits parameters for this FB (Parameters, Setpoints, Point Help, or Live GFBs). Retry this command later."

"Password Error - No OWNER level password. If no OWNER level password is present, passwords cannot be modified for lower level users. Contact your authorized service representative for more information."

"Password Error. Invalid password entered."

"Password Error. User attempted a command that was not allowed by their password level. Exit EMS and re-enter using the appropriate level password for the command."

"Passwords Lockout Advisory. Another user is editing the Passwords page at this time. Retry Passwords page edits later."

"Point Help Error - Files not available. The POINTHLP.DLL file is not found in the working directory or in the DOS path. Copy the above file to the proper directory and retry."

"Print Aborted Advisory. User aborted print command by pressing Double-Shift keys."

"Print Error. The printer is either not powered up or is not functioning properly. Verify printer connections and power; verify printer setup; or verify that current SYSVALA.DAT file exists in Custom M68 directory."

"Runlog File Open Error. Runlog file name on setup page (c:\emsys\alclog.txt) cannot be opened by EMS (invalid path or file name). Change runlog file name on setup page to valid path and file name."

"Schedule Download Error. Schedule download to 1, 1, 2, 1 unsuccessful or aborted by user. Eliminate phone line or CMnet noise and retry; verify correct module operation."

"Schedule Download Error. User attempted to download too many schedules for 1, 1, 2, 1. Up to 16 dated (32 undated) schedules are allowed per FB. Delete or consolidate existing schedules."

"Schedule Download Error. User tried to download schedules to an FB from an area level. Go to an FB and then download schedules to that FB."

"Schedule Error - Cannot have schedules. User attempted to obtain schedules from an FB that does not have the ability to receive schedules. Retry command for FBs that can receive schedules."

"Schedule Upload Error. Schedule upload from 1, 1, 2, 1 unsuccessful or aborted by user. Eliminate phone line or CMnet noise and retry; verify correct module operation."

"Schedules at this level and below - add unique schedules to operator's database"

"Schedules Lockout Advisory. Another user is editing the Schedules page at this time. Retry Schedules page edits later."

"Setpoint Error. User attempted to obtain setpoints from an FB that does not have setpoints. Retry command for FBs that have setpoints."

"Setup Lockout Advisory. Another user is editing the Setup page at this time. Retry Setup page edits later."

"This program does not support this feature."

"Time/date in gateway: 03:45. Expected by workstation: 04:10. Set to time/date expected by workstation?"

"Trend - Invalid Channel No. User attempted to obtain trend from channel that does not exist in FB. Rerun command using proper syntax."

"Trend - Point not in FB. User attempted to obtain trend from point that does not exist in FB. Rerun command using proper syntax."

"Trend - Upload Error. The specified trend could not be uploaded because of communications problems. Disconnect, reconnect, and retry the operation."

"Trend - Upload Error. The specified trend could not be uploaded because of communications problems. Retry the operation, or verify module communications."

"Trend Error - Invalid Channel No. User attempted to obtain trend from channel that does not exist in FB. Rerun command using proper syntax."

"Trend Error - Point not in FB. User attempted to obtain trend from point that does not exist in FB. Rerun command using proper syntax."

"Trend Error. Channel 41, expander 0 (DAMPER) not trending. Change Trend parameter for trend point to YES; or free up module memory by setting Trend parameter for unneeded trend points to NO."

"Trend Error. CM 8, FB 2, Expander 0, Channel 41 (DAMPER) has an invalid trend."

"Trend Error. Problem: CM 8, FB 2, Expander 0, Channel 41 (DAMPER) not trending. Suggestions: Change Trend parameter for trend point to YES; or free up module memory by setting Trend parameter for unneeded trend points to NO."

"Trend Error. The trend custom beginning time must be less than the trend custom ending time. Change the beginning and/or ending time."

"Trend Error. The trend range minimum must be less than the trend range maximum. Change the trend range minimum and/or maximum."

"Trend Error. The user attempted to trend a value that cannot be trended by EMS. Trend a value that can be trended by EMS."

"Trend Error. The user attempted to trend a value that cannot be trended by EMS. Trend a value that can be trended by EMS."

"Trend Error. User attempted to obtain trends from something other than an FB. Go to an FB and then pick the Trend command"

"Trend Error. User attempted to trend a value with interval of 0. Suggestions:Change affected trend interval to a non-zero number."

"Trend Historian Database Error. Trend historian database not found in path specified by ALC.INI file. Launch Trend Historian front end program for more information."

"Trend Historian Error. Trend historian error #3."

"Trend Historian Error. Trend historian error #4."

"Trend Historian Error. Trend historian samples requested by EMS not found for this point. Launch Trend Historian front end program for information on valid ranges for trended points."

"Trend Upload Error. The specified trend could not be uploaded because of communications problems. Disconnect, reconnect, and retry the operation."

"Tried to connect to 'ABC',line #2, connected to 'ABC', line #1. Disconnected."

"Warning - Damaged schedules list. The schedule database has become damaged. Contact an authorized service representative to resolve problem."

Software License Error Messages

The following messages may appear during installation, when working with the License Administration utility, or when a problem has occurred with the software license. Messages are listed in alphabetical order. For more information about the software license, see the section **Software License** on page 2-11.

"A software license may not be installed on removeable media or network drives. Please consult your manual for information regarding local hard drive license installation."

This error occurs if the operator attempts to transfer a license to a removable or network drive. The software license can only be installed on the computer's hard drive.

"A valid software license cannot be installed on an NT system. Please contact your software representative for information about NT systems."

The software license cannot be installed on this operating system. Make sure the computer is running Windows 3.1 or higher and that the software is successfully installed.

"An unknown error has occurred while accessing this license. Please free system memory and restart this software. If the problem persists, please contact your software representative to report the problem."

This error may be resolved by closing any unnecessary Windows applications, then restarting the workstation software. If necessary, close and restart Windows.

"One of the license files for this product has been altered. Please reinstall the software with the original distribution diskettes to correct the problem."

This error may occur if one or more of the software license files is corrupted or changed. Re-install the software using the original distribution diskettes to re-install the license. You will need to obtain a new Authorization Code to re-register the license after it is installed.

"One of the license files for this product has been damaged. Please reinstall the software to correct the problem."

This error may occur if the hard disk was damaged or if one of the software license was moved or corrupted. Re-install the software using the original distribution diskettes to re-install the license. You will need to obtain a new Authorization Code to re-register the license after it is installed.

"One or more of the software license files have been altered or are missing. Please reinstall the software from the original distribution diskettes to obtain a valid license."

This message may occur if one or more software license files are changed or deleted. To correct the problem, reinstall the software using the original distribution diskettes. A new Authorization Code must be obtained to re-register the license.

"One or more of the software license files have been moved. Please reinstall the software from the original distribution diskettes to obtain a valid license."

This message may occur if one or more of the software license files are moved on the disk. Re-install the software from the distribution diskettes to re-install the software license. A new Authorization Code must be obtained to re-register the license.

"Setup cannot install a valid product license for unknown reasons (Error = ##). Please contact your software representative to report the problem."

An error occurred during installation that affects the software license. Contact Technical Support for further assistance.

"Setup could not generate a valid software license due to unknown reasons (Error = ##). Please contact your software representative to report the problem."

An error occurred during installation that affects the software license. Contact Technical Support for further assistance.

"The authorization code is invalid for this site code. Check to see that the code has not been mistyped."

The operator attempted to enter an Authorization Code on the Registration pop-up, but the code is not valid. Correct any typographical errors and enter the code again. If necessary, call the Registration Desk to obtain a new code.

"The authorization data cannot be saved. Please insure that there is enough free disk space."

The operator attempted to register the software license by entering an Authorization Code, but the information could not be saved. Check to make sure the disk is not full or write-protected.

"The current system time has been moved prior to the installation of this software package and has invalidated the software license. Please reinstall the software from the original distribution diskettes to obtain a valid license."

This message occurs if the computer's time or date is changed to a time or date prior to the software's installation. Make sure the computer displays the correct time and date and re-install the software. A new Authorization Code must be obtained to re-register the software license.

"The current system time has been moved prior to the most recent software license check. This action has invalidated the software license until the system time is properly adjusted."

This message may occur if the computer's time or date is changed to an earlier time or date. Make sure the computer displays the correct time and date and launch the software again.

"The license cannot be transferred because one or more of the license files for this computer are missing or damaged."

The license cannot be transferred because the software license files on the computer the license is to be transferred from are missing or damaged. Install the software from the original distribution diskettes on the computer that is to receive the license. It will not be necessary to complete the transfer process, but you will need to obtain a new Authorization Code for the new computer to register the license.

"The license cannot be transferred because the registration file has been damaged."

The transfer cannot be completed because the registration file on the interim transfer location has been damaged. Prepare a new interim transfer location and attempt the transfer again.

"The license cannot be transferred because the registration is for a different application."

The transfer cannot be completed because the interim transfer location was prepared for a different application's software license. Prepare an interim transfer location for this software using the License Administration utility and attempt the transfer again.

"The license cannot be transferred because the temporary destination cannot be accessed. Please insure that the media is accessible and retry."

The diskette or network drive being used to transfer a software license cannot be accessed by the computer that the license is being transferred from. Ensure that the diskette is inserted into the correct drive and is not

write-protected. If a network drive is being used, make sure that the drive is accessible to the computer.

"The license cannot be transferred because the temporary transfer destination has not been properly registered."

The operator attempted to use the **Transfer License to Disk** option, but the interim transfer location has not been prepared using the **Prepare License Transfer Disk** option. The interim location must be prepared by the computer that is to receive the transferred license.

"The license cannot be transferred to the temporary registration location because the final target product already has a valid license."

The transfer cannot be completed because the interim transfer location was prepared on a computer that already has a valid software license. Prepare the interim transfer location from a computer that does not have a valid software license and attempt the transfer process again.

"The license information for this site cannot be accessed for unknown reasons. This operation is only supported on Windows 3.x and Windows 95."

The software license for this computer cannot be accessed for some reason. Make sure that the computer is running Windows 3.1 or higher and that the software is successfully installed.

"The license preparation cannot be performed at the specified location. Please insure that there is adequate disk space and/or the location is accessible."

The computer could not properly prepare the specified interim transfer location for the software license transfer process. Make sure that the diskette or network drive is not full or write-protected.

"The license transfer preparation cannot continue due to an insufficient amount of disk space at the target location."

The interim transfer location does not have enough free disk space to make the software license transfer. Free some space at this location in order to continue the transfer.

"The license transfer preparation files for this site cannot be accessed/ updated. Preparation aborted."

This message may occur if the computer that is to receive the transferred license is unable to access the preparation files made when the **Prepare License Transfer Disk** command was executed. Make sure that the disk is not full or write-protected, and begin the preparation process again.

"The main license file for this application cannot be accessed. Recovery is available through license transfer or reinstallation only."

This error may occur if the main software license file has been moved or deleted. To reinstall the license, re-install the software from the original distribution diskettes. If the software is reinstalled, a new Authorization Code will need to be obtained to re-register the software.

"The main license file for this application cannot be located. Recovery is available through license transfer or reinstallation only."

This error may occur if the main software license file has been moved or deleted from the hard disk. To reinstall the license, either re-install the software from the original distribution diskettes, or copy the license file from the first installation diskette. If the software is reinstalled, a new Authorization Code will need to be obtained to re-register the software.

"The main license file for this application cannot be located on setup disk #1. Please restore the license file or contact your software representative to report the problem."

This error may occur if the main software license file has been moved or deleted from the first installation diskette. Attempt the installation again using the original installation diskettes, or contact Technical Support.

"The main license file for this application has been altered. Recovery is available through license transfer or reinstallation only."

This error may occur if the main software license file has been changed. To reinstall the license, re-install the software from the original distribution diskettes. If the software is reinstalled, a new Authorization Code will need to be obtained to re-register the software.

"The main license file for this application has been damaged. Recovery is available through license transfer or reinstallation only."

This error may occur if the hard disk has been damaged or the main software license file has become corrupted. To reinstall the license, re-install the software from the original distribution diskettes. If the software is reinstalled, a new Authorization Code will need to be obtained to re-register the software.

"The main license file for this computer could not be transferred to the temporary destination. Please insure that the destination is accessible and not write-protected before retrying."

The diskette or network drive being used to transfer a software license cannot be accessed by the computer that the license is being transferred

from. Ensure that the diskette is inserted into the correct drive and is not write-protected. If a network drive is being used, make sure that the drive is accessible to the computer.

"The main license file located on setup disk #1 has been damaged and cannot be validated. Please restore the original license file or contact your software representative to report the problem."

This message indicates a problem with the license file on the installation disk used for this installation. Attempt to re-install the software using the original installation diskettes. If the problem continues, contact Technical Support.

"The main license file located on the setup disk #1 has been altered and cannot be validated. Please restore the original license file or contact your software representative to report the problem."

This message indicates a problem with the license file on the installation disk used for this installation. Attempt to re-install the software using the original installation diskettes. If the problem continues, contact Technical Support.

"The main license file on setup disk #1 has been replaced by a different application's license. Please restore the original license file or contact your software representative to report the problem."

The first installation diskette used for this installation contains a software license for another product. Attempt to re-install the software using the original distribution diskettes.

"The product license has become invalid. Either an attempt to use a different Authorization Code was made or the license files have been moved. Please reinstall the software from the original distribution diskettes to obtain a valid license."

The software license was invalidated either because the software license files were moved or deleted, or because an Authorization Code for a different site was entered during registration. Re-install the software to correct the problem. A new Authorization Code must be obtained to re-register the license after installation.

"The software license cannot be transferred due to the transfer preparation files in the source location are missing or have been altered."

This message indicates that the diskette or network drive being used to transfer a software license was not prepared using the **Prepare License Transfer Disk** option. This message may also occur if the diskette or network drive has been damaged, or the preparation files have been moved. If the license has already been transferred from the

original computer, then you must install the software on the new computer using the original distribution diskettes. Once the software is installed, you must obtain an Authorization Code to register the software license.

"The software license system requires the installation of the CKLDRV.SYS NT driver to function properly. Please follow the driver installation procedure supplied with this software before continuing."

This error occurs only on NT systems when attempting to run the software without installing this driver.

"The supplied authorization code is not valid for the given site code and is most likely an authorization code for a different site."

This message occurs if an operator enters an Authorization Code that has already been used on the Registration pop-up. An Authorization Code can only be used once. To register more than one copy of the software, call the Registration desk to obtain a new Authorization Code.

"There is already a valid preparation file at the specified location that cannot be overwritten."

The operator has attempted to use the **Prepare License Transfer Disk** option after the interim transfer location (either diskette or network drive) has been successfully prepared. This is an informational message only; click **OK** to continue and proceed with the transfer process.

"There is not enough disk space to install a valid software license. Please free some space or unprotect C: and continue."

This message may occur when transferring a license if the C: drive of the computer receiving the license is full or write-protected. Make sure that C: is not write-protected and has sufficient free disk space for the software license installation.

"This license destination has already prepared a license transfer location and cannot prepare a second one."

This message appears if the computer receiving a transferred license has already prepared an interim location, and the operator attempts to prepare a second interim location. Only one interim transfer location (either diskette or network drive) can be prepared. Use the previously prepared location to complete the transfer.

"This license is already valid and cannot be used to prepare a transfer location. Please run the License Administration program from the destination computer (the target system) to prepare a transfer disk."

The operator attempted to use the **Prepare License Transfer Disk** option on a computer that already has a valid license installed. The **Prepare License Transfer Disk** option should only be used on a computer that does not have a valid license installed. If you want to transfer a software license to a different computer, first run the License Administration program on the computer that will receive the transferred license, then select the **Prepare License Transfer Disk** option.

"This product currently has no valid license to transfer."

An attempt was made to use the **Transfer License to Disk** option on a computer that does not have a valid license. Use the **Transfer License to Disk** option only on a computer which has a valid license that you wish to transfer to another computer.

"This product has not been properly installed at this location. Please reinstall the software from the original distribution diskettes to obtain a valid license."

The software was not successfully installed on this computer. Re-install the software using the original distribution diskettes. An Authorization Code will be needed to register the software license after installation.

"This product upgrade requires access to the hardware key used to enable your previous version of the software. Please insure that this key is inserted before continuing."

Before an upgrade can be completed, the hardware key used for previous versions of the software must be properly installed. Make sure that the previous hardware key is correctly installed and continue the upgrade.

"This product upgrade requires access to the hardware key used to enable your previous version of the software. The key currently in place does not have the required settings. Please insure that the correct key is inserted before continuing."

The upgrade program detected a hardware key for a different application. Make sure that the previous hardware key is correctly installed and continue the upgrade.

"This product upgrade requires access to the hardware key used to enable your previous version of the software. The printer connected to this key appears to be off and is inhibting access to this key. Please turn the printer on before continuing."

The upgrade program could not access the hardware key because a printer attached to the key was turned off. Disconnect the printer or turn the printer on to continue the upgrade.

"This product's main license file cannot be accessed. Please try again."

This error may occur if the main license file could not be read for some reason. Retry the operation. If this message persists, contact Technical Support.

"This product's main license file cannot be located. Please restore the license file or reinstall the software to try to correct the problem."

This error may occur if the main software license file is moved or deleted. To resolve the problem, restore the software license file from the first installation diskette, or re-install the software using the original distribution diskettes. A new Authorization Code will need to be obtained to re-register the license.

"This product's main license file has been replaced with a license file after installation and has invalidated the software license. Please reinstall the software from the original distribution diskettes to obtain a valid license."

The main software license file was overwritten with a license file from a different product or installation. Re-install the software from the distribution diskettes. The software license must be re-registered and a new Authorization Code must be obtained.

"This site already has a valid software license and is unable to receive a transferred license."

The operator attempted to use the **Receive License From Disk** option on a computer that already has a valid license installed. A license can only be transferred to a computer that does not have a valid license.

"This site cannot receive the license because a valid license has not yet been transferred to the temporary location."

The operator attempted to transfer the software license prior to using the **Transfer License to Disk** option. This option must be used to transfer the license from the original computer to the interim transfer location. The license can then be transferred from the interim location to the new computer using the **Receive License From Disk** option.

"This site cannot receive the license because it was not prepared properly through the 'prepare license transfer' process or the license transfer preparation files have been moved or damaged."

The operator attempted to transfer the software license on to a computer that was not used to execute the **Prepare License Transfer Disk** option. The license must be transferred onto the computer that was used to execute the **Prepare License Transfer Disk** command. This message may also occur if the files created during the **Prepare License Transfer Disk** procedure have been moved or damaged since the procedure was finished. In this case, you must install the software onto the computer using the original distribution diskettes. Once the software is installed, you must obtain an Authorization Code and register the software license.

"This site cannot receive the license because the temporary license files are either missing or damaged."

The license files on the interim transfer location have been erased or corrupted, and the transfer cannot be completed. Install the software on the new computer using the original distribution diskettes. Once the software is installed, you must obtain an Authorization Code and register the software license.

"This site cannot receive the license because the temporary license location contains an imprint that is either too old or does not match this site."

The transfer cannot be completed because the interim transfer location was prepared too long ago or was prepared on another computer. Attempt the entire transfer process again, or install the software on the new computer using the original distribution diskettes. If the software is installed using the distribution diskettes, you must obtain an Authorization Code and register the software license.

"This site could not receive the license because the main license file could not be transferred. Please insure that the main license file exists in the source location and that the destination drive is accessible before retrying."

This message may occur if the main license file is moved from the diskette or network drive used to make the transfer, or if the hard drive of the new computer is full or write-protected. If this message reappears, install the software on the new computer using the original distribution diskettes. Once the software is installed, you must obtain an Authorization Code and register the software license.

Modstat Error Messages

NOTE The message **Halted since hh:mm Day mm/dd/yy** will always show a time and date within the last 10 minutes even though the first time the module halted may have been some time ago. This is because the module is restarted every 10 minutes while halted so that a one-time or spurious error will not halt the module indefinitely.

ERROR - Stopped since hh:mm Day mm/dd/yy by Incomplete Schedule download to FB 3

Cause: Communications were interrupted during a schedule download.

Action: Download Schedules to the FB whose number appears at the end of the error message.

ERROR - Stopped since hh:mm Day mm/dd/yy by Incomplete Parameter download to FB 3

Cause: Communications were interrupted during Download Parameters.

Action: Download Parameters to the FB whose number appears at the end of the error message.

ERROR - Stopped since hh:mm Day mm/dd/yy by Incomplete Memory download

Cause: Communications were interrupted during a Download Memory.

Action: Download memory again.

Cause: Attempted to download too many programs into an ‘A’ or ‘B’ (no longer being used) type 8401 board. (may be paired with ‘Halted by bad write’)

Action: Replace with a ‘C’ type 8401 board and download memory.

Cause: A manual memory command [xx0M0...=] was issued through XTK or Netscan and not followed with the end command [xx0E=]. (XTK no longer in use.)

Action: Send end command (observe cautions for using the end command).

Cause: Memory download was interrupted by write error, in which case this 'Stopped' message may be paired with a 'Halted' message saying 'Bad write to $XXXX'.

Action: Determine why a write error occurred. Possibilities are:

1) Low power is inhibiting memory writes - correct power.
2) Memory failure - replace cover.

WARNING - EE Marginal - check power or replace

Cause: Power to the module is low. Input power should remain above 24 VAC with all relays energized. May be caused by an undersized transformer or too much field load.

Action: Correct power.

Cause: Power is good but EEPROM memory is weak.

Action: Replace cover.

WARNING - RP 19 requested by FB 2 not found.

Cause: An older FB such as TCP, IOP, or EMP was downloaded into an 8401 board which does not support that kind of program. The following FBs are supported on the 8401:

8401 type A: EMP, OAP, TCP, AIM

8401 type B: EMP, OAP, TCP, AIM, IOP, XIO, DIM, SCP

8401 type C: no old FBs supported.

Action: Obtain correct 8401 board for this application.

WARNING - Chan 13 requested by FB 4 already used as Chan 13 by FB 3

Cause: Physical Output conflict between two FBs. Function Blocks are allowed to share any form of input, but output conflicts cannot be resolved. Note that channel 41 will conflict with channel 11 since they both use the same physical point.

Action: Correct conflict in parameters and then download memory.

WARNING - Chan 34 requested by FB 2 does not exist on a 442

Cause: Input or output channel does not exist on this board type.

Action: Correct conflict in parameters and then download parameters to the FB who was in error.

WARNING - XRAM needed for Analog Chan 45 requested by FB 2

Cause: 8401 board has empty RAM socket.

Action: Replace 8401 with new board with all sockets filled.

ERROR - Halted since hh:mm Day mm/dd/yy by Changed ADDR Address used to be 15 ($0F)

Cause: Cover moved - existing programs are now invalid.

Action: Download memory.

ERROR - Halted since hh:mm Day mm/dd/yy by Changed TYPE Type used to be 442

Cause: Cover moved - existing programs are now invalid.

Action: Download memory.

ERROR - Halted since hh:mm Day mm/dd/yy by Bad write to $XXXX

Cause: Attempted to download too many programs into an ‘A’ or ‘B’ type 8401 board. (will be paired with ‘Stopped by incomplete Memory Download’).

Action: Replace with a ‘C’ type 8401 board and download memory.

Cause: Low power is inhibiting memory writes.

Action: Correct power.

Cause: Memory failure.

Action: Replace cover. Download memory.

ERROR - Halted since hh:mm Day mm/dd/yy by Bad EE checksum

OR: **Bad EE Format - Download Memory**

Bad SWI call

Too Many WDTs

Empty EE

Illegal write to $XXXX

Cause: Memory contents are bad, but will accept a memory download.

Action: Download memory. Note module location and date. If problem re-occurs, check the following:

1) Power - spikes, surges, noise, dips, brownouts.

2) Lightning - poor grounding, power line sensitivity.

3) Environment - high heat, condensing humidity.

Cause: Memory damaged - will not accept a memory download.

Action: Replace cover. Download memory. Log module location and date. If problem re-occurs, check the following:

1) Power - spikes, surges.

2) Lightning - poor grounding, power line sensitivity.

* * *

9 Glossary of Terms

Alert

A Windows application which provides sophisticated alarm management capabilities for single-user and for multi-user installations.

Alert EL

The basic alarm receipt software that ships with SiteScan 2000 for Windows

Alert Server

A software module which gathers the alarm and trend information and then distributes it to Alert EL. Alert Server is included in Alert EL and it has no user interface. Alert Server is launched automaticaly when Alert EL is running and configured as a receiving station.

Configuration Text

A text file used to create the System database structure, otherwise known as **xxxcnfig.txt**. Among other things, it defines parent and child relationships between nodes. After the configuration text is created, it is compiled into several data files which are actually used by the workstation software. Changes made while on-line with a System are stored in these data files. When you exit after making changes, SiteScan 2000 for Windows allows you to update the text file with the changes stored in the data files. Thus the compile and update processes are exact opposite processes which keep the System database current.

Control Module

A microprocessor-based hardware product designed for stand-alone monitoring and/or control. Many types are available in a variety of input/output configurations. Positioned at the local point of control, control modules are wired to form a local area network. Control modules typically communicate with the Workstation computer through a gateway module (DCLAN or SiteGate-232).

DCLAN

A gateway module for multiple control module networks (CMnet) which routes communications between the CMnet(s) and the Workstation(s).

Dynamic Update

A feature which allows information (such as colors and point status) to be automatically updated while communicating on-line with the system. This feature is enabled by the **Dynamic Update** option on the Setup Page.

Eikon

A Windows-based application used by Liebert Site Applications which provides the ability to graphically program, display, and interact with any sequence of operation. It features microblocks (representing common control devices and complex functions) interconnected on the screen by graphical wires to form logical connections. Eikon is used by Liebert Site Applications primarily to create Graphic Function Blocks (GFBs).

Expander Module

A module which is added to an existing module in order to expand the number of I/O points. One or more expander modules connected to a base module is called a "stack". Each expander has a unique address in the stack which is called the expander number.

FB Help

A feature which displays a Windows help file for a Function Block. FB Help files are included with workstation software V2.0 or later for most module drivers.

Firmware

The software program which resides in a module's PROM and controls various vital functions within the module. Also known as the Exec.

Function Block

A software program which consists of small program blocks that can be linked together and have parameters assigned by the designer or operator. Parameters are accessed on the Parameter page and point statuses are displayed on the Status page. Those FBs constructed in Eikon are referred to as Graphic Function Blocks (GFBs).

Gain

A parameter which a Function Block multiplies with an analog I/O value in order to convert the signal into desired units (e.g., mA to deg. F). **Gain** is used together with the **Offset** parameter for point calibration. The Point Help feature can be used to easily calculate this parameter.

Gateway Module

A communications interface, DCLAN or SiteGate-232, whose primary purpose is to act as a communications link between the control module network(s) and the Workstation(s).

Graphic

An image file used to display information about certain items in a system. A graphic typically combines dynamic text and colors with artistic renderings to create a tasteful and friendly display of large amounts of information. Graphic files are created using Draw for Windows and can be associated with areas, equipment, or modules.

Group

A node to which other nodes, such as Function Blocks, individual zones or floors, or even other groups, may be associated for scheduling purposes.

Hierarchy

The structure of a system which usually mimics the structure of the building being monitored. Each system in this hierarchy is organized into areas which may contain other areas or pieces of equipment. The hierarchy determines how a user will progress through the system.

Live GFB

A feature of SiteScan 2000 for Windows which displays a Function Block graphically, with the output of each microblock displayed with live data from the module. Parameters can be edited on this screen and the changes downloaded to the module.

Modstat

A screen in SiteScan 2000 for Windows which displays all the information relevant to a control module. Among other things, the Modstat page displays the following:

- Input/Output point information
- Resident Function Blocks
- Error conditions which may exist in the module
- Date and time downloaded into the module
- Exec version

Module Driver

A Function Block residing in every module which interfaces between the other Function Blocks and the module hardware. A module driver FB is always addressed as FB #15. Use the **FB Help** feature for help on module drivers.

Node

Any location in a System. The 3 types of nodes are Function Blocks, non-FB graphic frames (floorplans, maps, logos, building/equipment summaries, etc.) and Groups. A node can be identified in the **xxxcnfig.txt** file by those lines which contain an equal sign.

Offset

A parameter which a Function Block adds to an analog I/O value in order to shift its range to match a standard range (e.g., 4-20 mA, 3-15 psi, 0-10 V). **Offset** is used together with the **Gain** parameter for point calibration. The Point Help feature can be used to easily calculate and calibrate this parameter.

Parameter

A value associated with a microblock which can be modified (by one who enters at the appropriate password level) on the Function Block parameter page.

Point Help

A feature of SiteScan 2000 for Windows which helps the entry of parameters for Input and Output points by displaying a list of possible choices based on the module type and type of I/O signal. It can also be used to calculate and calibrate the offset and gain parameters.

Runtime

The amount of time that a piece of equipment is running. This information can be accumulated and compared against a user-defined limit. When the limit is exceeded, a message can be generated.

SiteScan 2000 for Windows

A full-featured software package designed specifically for monitoring critical equipment and runs on a Workstation. It features high resolution, dynamic color graphics with pickable windows and pull-down menus.

System

A term used to identify an installation of control modules by a three-character name. Each System has its own subdirectory under **c:\ss2000** which contains all of the files specific to that System.

Trend Historian

A feature of SiteScan 2000 for Windows which stores New trend information gathered by Alert Server in a database so that it can be seamlessly retrieved and displayed on the Trend Graph.

Virtual Module

A portion of a physical (real) module's memory that has been reallocated in order to expand the number of Function Blocks which may exist in that physical module. Like a real module, a virtual module can have a CMnet address. Using virtual modules reduces the memory available for storing trends. Virtual modules are used only in Exec 4.x modules.

Workstation

A computer which acts as the main communication interface between human operators and the hardware.

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Printed in U.S.A.
SL-27091 (11/98) (50/60)